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With Which Is Combined

PAPER

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Big News Print Machine Starts At Powell River

Seventh Unit Installed At British Columbia Plant Turned Out First Roll December 30—New 226 Inch Machine Is Designed For Speeds Up to 1,400 Feet Per Minute, With Daily Output of 150 Tons—Capacity of Mill Is Now Approximately 630 Tons of News Print Per Day—Construction Program In Final Stages.

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., January 8, 1931—On Tuesday, December 30, the Powell River Company's news print machine—the seventh to be installed since the plant started construction twenty years ago—turned out its first roll of news print. This action embodies the results of over a year of steady construction work which increased the daily news print capacity of Powell River, B. C., from 500 to 630 tons, and involved an expenditure of $8,000,000.

It is just two decades since the Powell River Company pioneered the news print field in British Columbia by commencing clearing operations on their present plant site. In May, 1912, the initial construction had been completed and the first roll of news print ever shipped from a British Columbia mill steamed down the Gulf of Georgia. These rolls, like their successors of 1930, came direct to the province which gave British Columbia readers their first newspaper manufactured from the great soft wood stands of British Columbia.

Expansion of Organization

In its twenty years of operation, the Powell River Company has launched four distinct programs of plant extension. In May, 1912, the installation of two news print machines, with a combined capatity of 100 tons, concluded the first construction offensive. These two machines were 150 inches and 156 inches wide respectively and operated at a speed of 650 feet a minute. One year later, two larger machines, 184 inches in width, with similar speed capacity, swelled the daily output to above 200 tons.

In the years following the war, came the huge increase in the world's demand for news print and pulp wood products. With it went the phenomenal expansion of Canada's pulp and paper industry. In 1920 the United States produced nearly twice as much news print as Canada. Ten years later the Canadian output, approximately 3,000,000 tons, was double the output of all the newsprint mills south of the international border.

Present Program Being Completed

It was during this period that the Powell River Company inaugurated its third period of expansion. Between 1924 and 1927, two additional machines, 234 inches wide, running at a speed in excess of 1000 feet a minute, doubled the capacity of the plant, bringing the daily output to 500 tons—an output surpassing that of any individual plant on the Pacific Coast. A year ago, to keep pace with the demands of the publishers and new customers, the directors of the company inaugurated the present construction program, now in its final stage.

The seventh machine, now in operation, is the last word in paper machine construction. Designed for speeds up to 1400 feet a minute, it is 226 inches wide, and its daily output of 150 tons will exceed the united capacity of the two original machines installed in 1911-1912. It is no exaggeration to say that with No. 7 settling down to business, British Columbia has what is probably one of the most modern and efficiently-equipped news print machines in the world.

Exclusive and Original Features

Combined with the experience garnered by the manufacturers, are several installations conceived and supervised by Powell River Company engineers and operating staff-installations which appear on no other news print machine at present in operation. These are practical applications of knowledge gained by close observation and experience in the local plant and are expected to greatly enhance the efficiency of the machine and improve the quality of the finished sheet.

Made by Dominion Engineering Works

The new machine is a product of the Dominion Engineering Works of Montreal; the large electric installations rendered necessary by the development of the new hydro project at Lois River and the additions at Powell River are being installed by the Canadian General Electric Company; the general building contracts for the entire construction program were awarded to the Stuart Cameron Company, of Vancouver.

Canadian Pulp & Paper Association to Meet

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que, January 5, 1931—Modified plans for the annual meeting of the Canadian Pulp and Paper Association were announced today. On Wednesday, January 28, the annual meeting of the Technical Section will be held here, and the annual meeting of the Woodland's Section will take place on the following day. On Friday morning, January 30, at ten o'clock, the annual general business meeting of the association will be held. All these meetings will take place at the association's headquarters, in the building of the Forest Products Laboratory of Canada. The usual social functions will be dispensed with, and therefore there will be no semi-public luncheon nor will the customary President's dinner take place.

National Timber Conservation Board Meets

Leading Paper Manufacturers and Foresters Appointed Members of Advisory Committee—Perpetuation of American Forests and Stabilization of Industries Based On Use of Timber Will Be Developed By New Body Formed By President Hoover.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 4, 1931—D. C. Everest, of the Marathon Paper Mills Company, Rothschild, Wis., former president of the American Paper and Pulp Association, last week represented the paper industry at the initial meeting of the National Timber Conservation Board appointed by President Hoover recently. Secretary of Commerce Robert P. Lamont, is chairman of the Board.

An advisory committee was appointed which will include George Sisson, Jr., and Dr. Hugh P. Baker, former secretary of the American Paper and Pulp Association. R. Y. Stuart, Chief Forester of the United States, will be chairman of the advisory committee, and Ripley Bowman, of the Department of Commerce will be administrative secretary of the President's Board.

Board Formulates Plans

It was pointed out at the initial meeting that chronic overproduction is the chief obstacle to the preservation and conservation of the nation's timber resources. In view of this situation, the board plans to compile the important facts of production conditions and trends in the forest industries, analyse and interpret them in order that such policies and programs of public and private action as will safeguard the public interest may be developed, leading to the perpetuation of the forests and stabilization of the industries based on the use of timber.

Among the specific topics which the board plans to consider are included problems of taxation of timber and forest lands; sale and use of publicly owned timber, especially National forests, Indian timber reserves, and state forests; economic causes of the prevailing condition of over production of forest products and consequent waste of timber, depletion of forest resources, and insecurity of employment in the forest industries; proposals to divert submarginal agricultural lands to commercial forest growing, the appraisal of relative importance of forestry projects.

Initial funds to finance the survey have been secured from private sources. It was announced at the meeting that the board's headquarters will be in the Department of Commerce.

Advisory Committee Members

Members of the advisory committee as set up by the Board include E. T. Allen, forest economist, Western Forestry and Conservation Association, Portland, Oregon; Hugh P. Baker, Dean, New York State College of Forestry; Wilson Compton, manager, National Lumber Manufacturers Association; William L. Cooper, director, Bureau of Foreign and Domestic Commerce; S. T. Dana, Dean, School of Forestry, University of Michigan; Fred R. Fairchild, professor of economics, Yale University; Henry S. Graves, Dean, School of Forestry, Yale University; W. B. Greeley, secretary-manager, West Coast Lumberman's Association, Seattle; Charles T. Herty, consulting chemical engineer, New York City; D. T. Mason, consulting forester, Portland, Oregon; George N. Ostrander, president, Finch, Pruyn & Co., Glens Falls, N. Y.; Charles James Rhoads, Commissioner of Indian Affairs; George W. Sisson, Jr., director, American Forestry Association, Potsdam, N. Y.; R. Y. Stuart, U. S. Forester and Vice-Chairman of the National Committee on Wood Utilization, and J. W. Watzek, Jr., Crossett-Watzek-Gates, Inc., Chicago.

Those Who Attended

Members of the Board attending the initial session were Robert P. Lamont, Secretary of Commerce; Arthur M. Hyde, Secretary of Agriculture; Ray Lyman Wilbur, Secretary of Interior; John W. Blodgett, Grand Rapids, Michigan; John H. Kirby, Houston, Texas; Paul G. Redington, president, American Society of Foresters and also head of the Biological Survey; Charles Lathrop Pack, president, American Tree Association; George D. Pratt, New York, president, American Forestry Association; John C. Merriam, Washington, D. C., president, Carnegie Institution; L. J. Taber, Columbus, Ohio, Master of the National Grange; Carl P. Gray, Omaha, Nebraska, president, Union Pacific Railway Company; D. C. Everest, Rothschild, Wisconsin, past president and member of the executive committee of the American Paper and Pulp Association, and W. M. Ritter, Columbus, Ohio.

Empire State Reforestation Activities

[FROM OUR REGULAR CORRESPONDENT]

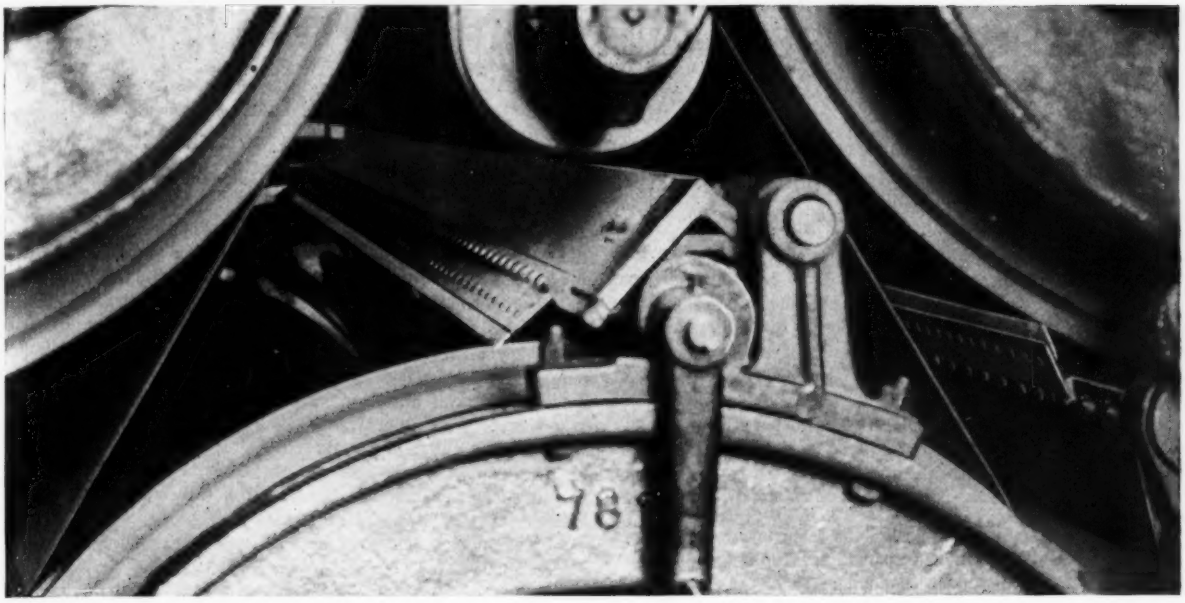
WATERTOWN, N. Y., December 27, 1930.—A movement has been launched by Northern New York organizations to have Jefferson County transferred to the Fifth State Park Region in connection with reforestation activities or else create a new park district composed of the four northern counties. As matters now stand Jefferson County is among twenty-one counties included in the sixth park region as mapped out by the State and most of this tract comes under the forest preserve area which prohibits development under laws if purchased by the state. This is included to be the principal reason why Jefferson County has received no appropriations for State park purposes and it is a well known fact that the Northern New York Development Association has been working diligently in an effort to bring about a more equalized distribution.

If the State decided to acquire land in the forest preserve region, including virtually all of the Northern New York counties, it is banned from using it for any other purpose under Constitution laws. Among the forest preserve counties in this section are Oswego, Onondaga, Madison, Cortland, Chenango, Otsego, Broome, Clinton, Lewis, Franklin, Oneida, Herkimer, Hamilton, Essex, Warren, Fulton, Ulster, Saratoga, Washington, Greene and Sullivan. The suggestion has been made, however, that the State could buy lands in the forest preserve region and then let the county officials take title to the tract which would permit development. It is claimed that just now there are only a few small areas in Jefferson County set aside for state park purposes and if it was made a part of the fifth park area that more appropriations could be obtained for development purposes.

Crown Paper Box Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 29, 1930—Incorporation papers for the Crown Paper Box Company, Inc., of this city have been filed with the secretary of state. The new company, incorporated for 3,500 shares of a par value of $10 a share, has taken over a box, barrel and basket business from the Concilla Laboratories. Two floors in the Murphy building are to be occupied by the firm. More machinery and equipment are to be installed next year as part of an expansion program, officers said. Most of the employees are stockholders. The incorporators are Franklin H. Thompson, president; Leo T. Dwyer, vice-president and treasurer; John J. Wanner, secretary, and Hazel Wanner and Jesse J. Haynes, directors.



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Northern Paper Mills Had Excellent Year

Together With Associated Companies, Full Time Operation Was Maintained Throughout 1930—Number of Orders Booked and General Situation Indicates Continued Progress of Organization—Various Activities of Wisconsin Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 12, 1931—Full time operation was maintained straight through the year 1930 by the Northern Paper Mills, Green Bay, Wis., and its associated companies, the Northern Electric Company, and the Tuttle Press Company of Appleton, Wis. The company has had one of the best years in its history and looks for continued progress, judged by the number of orders now on the books and the situation in general. The company had a total pay roll of 793 workers who received a total in wages and salaries of $1,258,272. The company also has 500 additional employees at times getting out pulp wood on its timber preserves. The Patten Timber Company, at Amasa, Mich., has 225 employees.

New Boiler Plant Completed at Munising

The new boiler plant recently completed by the Munising Paper Company, Munising, Mich., is among the largest in this section of the country. The building is seven stories high and houses boilers capable of producing 182,000 pounds of steam hourly. About 60,000 tons of coal will be consumed yearly by the automatic pulverizing system. A normal pressure of 400 pounds of steam is maintained. Turbines operated by the power plant generate 7,500 h.p. for the company's mills. The plant covers 52 acres. The company's principal product is Caslon bond.

Shartle Bros. Acquires Hayton Pump

Announcement is made of the purchase of the Hayton Pump and Blower Company of Appleton, Wis. by the Shartle Brothers Machine Company, Division of the Black-Clawson Company. This move is in line with the policy of the Black-Clawson Company to manufacture a complete line of paper mill machinery, enabling a customer to purchase practically their entire equipment at one source, and thus center responsibility for the equipment instead of dividing it among a dozen firms. This purchase adds a line of centrifugal pumps, Bond batch refiners, circulating agitators and valves to the existing lines.

The Hayton Pump and Blower Company has an international reputation on centrifugal pumps, Hayton agitators and batch refiners, and have also found a very ready acceptance in a number of mills, the new batch refiner being especially well received. It is said this batch refiner has accomplished some very remarkable results and much interest is being manifested in this development.

The entire plant is being moved to Middletown, and the sales will be handled through the present sales force. Mr. Bond, who will head this new department at Shartle Brothers, is a recognized authority on centrifugal pumps, and is also a man of wide experience in paper mills, so that for the first time it is possible to purchase a highly efficient centrifugal pump, and at the same time, secure the advice of a practical paper mill man concerning the installation.

It is understood that it is the purpose of the Shartle organization to offer Mr. Bond's services to the mills, assisting them in determining costs on present methods of pumping and possible ways of making savings along this line.

News of the Industry

Timber hauling by motor truck will be tried by the Newaygo Timber Company, of Port Arthur, Ont., a subsidiary of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis. Five Four Wheel Drive trucks have been purchased from the Four Wheel Drive Auto Company, Clintonville, Wis., and were driven over land to Port Arthur. About 60,000 cords of pulp wood will be transported this winter from the Canadian woods.

A complete bibliography on the subject of "Hydration" appears in the Library Bulletin just issued by the Institute of Paper Chemistry of Lawrence College, Appleton, Wis. The bulletin is being issued regularly each month by the institute for the use of its supporting members. Harold W. Bialkowsky, one of the students, prepared the treatise on hydration, covering more than fifty authors and one hundred titles. The bulletin also contains abstracts of 39 articles gleaned from recent issues of more than 75 technical publications. Some were translated from German and Swedish by members of the institute staff.

J. M. Conway, president and general manager of the Hoberg Paper and Fibre Company, Green Bay, Wis., has been appointed a member of the Vocational School Board of that city. The Hoberg company has announced the appointment of H. G. Wintgens as vice-president in charge of sales. He was formerly assistant sales manager. The company has donated the use of it recreational park to the city of Green Bay for an ice rink and hockey courts, largely for the benefit of the mill employees.

With a fund of approximately $100,000 released for immediate use as a public relief measure to stimulate employment, the Federal Forestry Bureau will start work immediately on five road construction projects in the federal forest areas of northern Wisconsin and upper Michigan, according to announcement of E. W. Tinker, Milwaukee, Wis., district forester. Two roads will be built in the Flambeau unit, two in the Argonne, and one in the Moquah unit of Wisconsin; three will be built in the Mackinac unit and one in the Marquette reserve in Michigan. About 150 men will be employed. The roads will serve largely as a means of access to these districts for fire fighting purposes and also will be of help in the vast tree planting plans for the coming seasons. A new nursery is to be established near Rhinelander, Wis., and a road will be built there also.

Articles of dissolution of the Lakeview Paper Company, Neenah, Wis., have been filed with the Secretary of State of Wisconsin. They were signed by R. E. Wood, president, and A. McConnell, secretary. The company discontinued business nearly two years ago, when its mill was purchased by the Kimberly-Clark Corporation. For a number of years it was owned by Sears, Roebuck & Co., for the manufacture of catalog paper.

A fire last week threatened the main mill of the Fox River Paper Company, Appleton, Wis. The blaze started in a rag dusting machine but was extinguished before it broke out of the large bin. The mill was not incapacitated.

Cigarette Paper Case Discontinued

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 12, 1931—The United States Tariff Commission has officially announced that it has "discontinued and dismissed, without prejudice," its investigation into the tariff rates on cigarette books, cigarette book covers, and cigarette paper in all forms, except cork paper. This is in accord with the recent request made at the public hearing.

The original investigation was started as the result of a Senate resolution introduced by Senator Copeland, of New York and it is being discontinued as the result of a Senate resolution introduced by the same member of the Senate.

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A news mill repaid the cost of its Downingtown Suction Roll installation at the end of seven months. They installed two rolls in 1925, therefore the rolls have paid dividends for more than four years, and are still running. The design and construction of the Downingtown Roll safeguards the economies derived from the suction roll operating principle. A complete 24 page catalog sent upon request.

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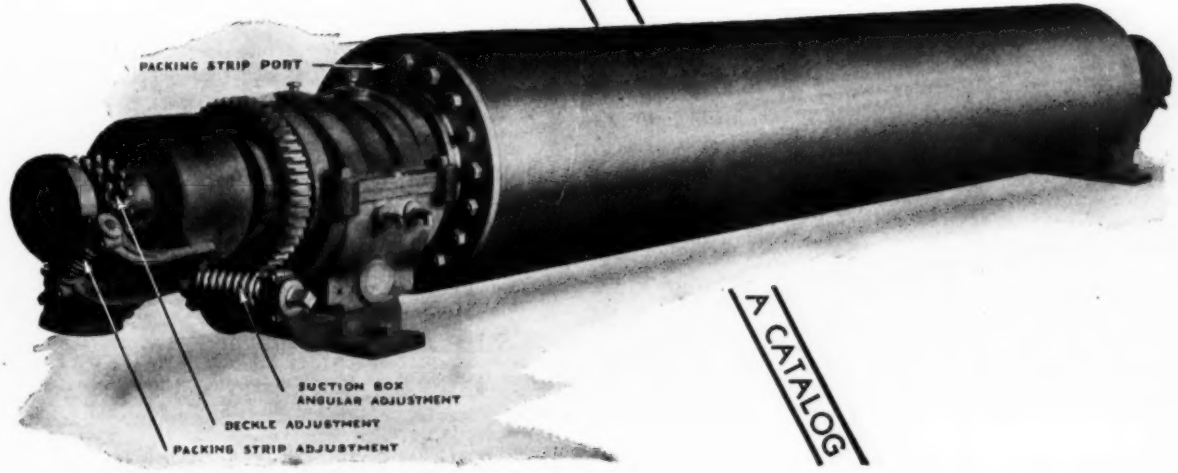


Demand For Paper Rather Light In Chicago

Fine Paper Market Rules Sluggish At Present, Although Outlook For Future Is Considered Fairly Promising—Buyers of Standard Grades of Paper Are Not Disposed to Replenish Stocks Until More Stabilized Prices Are Assured

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 10, 1931—It has been a dull week in the Chicago paper market. Inventory has taken up the time of practically all jobbers, distributors, etc., but along about January 15 a rather general indication of the trend, and what it will be, is expected to reveal itself. Right now there is a strong undertone of optimism in the market. Prices, however, are expected to drift rather aimlessly until jobbers get together after the annual meeting of the National Paper Trade Association in New York in February. Buyers have shown no disposition to stock in any great quantity until a stabilized price is assured. The remark has been made several times that if every purchaser would buy enough paper to bring his stock even up to normal requirements every mill and every worker would be kept mighty busy for from four to six weeks. Inventories are reported exceedingly low. In the specific markets rumors have again started involving kraft prices. There seems to be indication that some price cutting has been going on even though hopes were high that a general price level had been reached. In the board market it is expected that a four or five day week—if it is carried out—may be a solution to over-production. Fine papers are sluggish at this time but have fair prospects for the Spring. Ground woods are reported rather spotty. Perhaps, after inventory and the annual meeting, true trends will reveal themselves in a workable and understanding light.

Power Show to be Held at Coliseum

The Mid-West Power Conference, which always attfacts a number of mill executives, will be held in Chicago, February 10 to 14. The Mid-West Engineering Exposition will be held at the same time in the Chicago Coliseum and will bring to this city a cross section of the newest developments in power machinery and appliances. The power show, the power conference and the fuels meeting will present a rare educational opportunity to old and young engineers alike, and one that will probably not be overlooked. Upwards of 200 leading manufacturers of power machinery and appliances have taken space at the power show and indications are that the 85,000 square feet of exhibit floor space will be filled. The important field of generation, utilization and distribution of power will be covered. Engineers will have an opportunity to study their specific problem including fuel oil burners and refractories, pumps, pumping accessories, water treating equipment, chemicals, transmission of supplies and equipment, boilers and boiler problems, motors, tools and metal working equipment, boilers and boiler problems, motors, tools and metal working equipment and numerous other machines and appliances.

The conference will headquarter at the Stevens Hotel and will begin at 9:00 a.m. Tuesday, February 10. Leading engineers will be on the program on all four days. Some of the subjects to be covered by speakers include "Dual Purpose Power Plants and Commercial Distribution of High Pressure Steam," "Trends in Steam Turbine Development," "Developments in Evaporator Practice and Design," "Reduction of Unaccounted for Losses in Boiler Tests" and many others.

Salesmen Continue Discussions on Differentials

The Transportation Committee of the Chicago Division of the Salesmen's Association, under the leadership of Jim Coy, is working up a special car over the New York Central for transportation to the annual meeting in New York. The car will pull out on February 15. At the same time the Nomination Committee has been appointed. The present divisional vice-president, Harold Knott, has served notice that he will not "choose to run again" but he may be called on yet and forced to repeat his successful leadership. The regular Monday meetings featuring a discussion on differentials will probably be brought to a close next Monday, January 12, with a final summarization meeting slated for the week following. The last meeting will feature differentials on weights in all grades and promises to be equally as interesting as other discussions. The meeting last week on differentials on car loads and less than car loads was featured by a genuine participation in the round table discussion. The entire program begun more than a month ago has been unusually successful, according to Mr. Knott. The salesmen have involuntarily contributed quite a bit of most useful information, based on actual experience, which will be molded together, reviewed, and passed on to the parties interested.

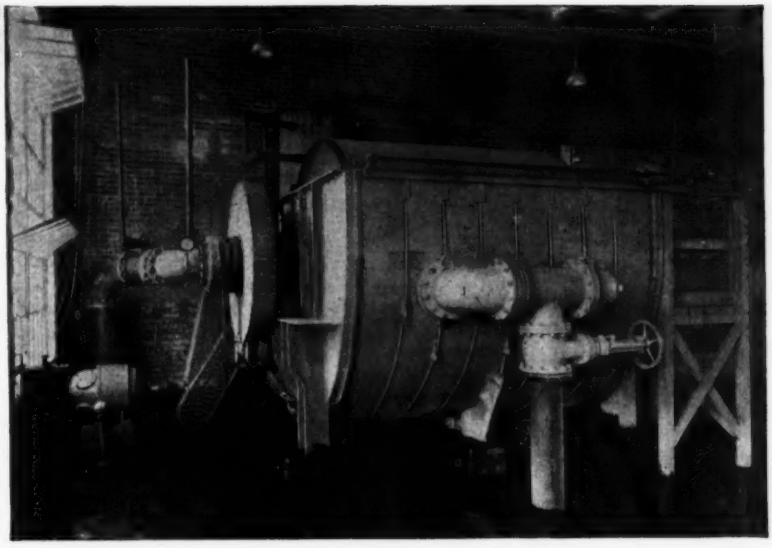
Paper Board Trade Practice Rules

An important announcment comes from the offices of the Paperboard Industries Association at 608 South Dearborn street, Chicago, to the effect that the association has relinquished the administration of trade practice rules for the industry as a whole. The rules, however, are still effective, and may be availed of by the industry. This is in accordance with action taken by members of the association at the annual meeting in New York Effective December 31, the association will cease to administer trade practice rules for the paper board, container and folding box industries and the special division created to administer these rules will be discontinued. In effect, the Paperboard Industries Association is merely giving up the obligation to administer these rules, which obligation it assumed at a mass meeting of the industry on March 19, 1929. The trade practice rules adopted by the industry and approved by the Federal Trade Commission are, of course, still in effect and may be availed of by the industry, irrespective of the discontinuance of the Trade Practice Division of the Paperboard Industries Association.

News of the Trade

The Chicago Paper Company continues its effective campaign to popularize Warren products with a striking little folder headed "10,000 Must be Ready by Saturday." The copy is a narrative of an experience of a paper user who wanted standard paper and wanted it quickly. The copy outlines the advantages of standard paper sizes, based on this experience. The inner fold lists Warrens papers carried in the Chicago Paper Company stock and features a diagram of the varieties of folds in the standard sheet size.

George D. Gaw, president of the Gaw-O'Hara Envelope Company, has an interesting story in the current issue of *Chicago Commerce* telling of the new sign board in front of their building at the intersection of Franklin and Sacremento Boulevards announcing to the world at large some of the lesser known, and far more beneficial, facts concerning the city of Chicago. Mr. Gaw tells, in his narrative of coming to Chicago and starting his now big envelope company on a capital of $500 and mentions its growth to a point where it is now one of the largest direct-to-customer envelope companies in the world. He shows his gratitude for Chicago's "kindness" by using his company's display to advertise the parks, playgrounds, golf courses, etc., which constitute a part of the real Chicago. Mr. Gaw's efforts have received widespread and favorable publicity, a thing which Mr. Gaw may not be after but which is helping to build good-will.



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High capacity is an outstanding feature of the Oliver United Deckers. There are several units each deckering over 150 tons of sulfite or soda in twenty-four hours and they are doing it at a high rate-per square foot of filtering area.

And high rates are also obtained on other stocks. For example, operating records of a recently installed 8′ x 14′ Oliver United Groundwood Decker show 49 tons per 24 hours, from a feed of 0.54 A.D. consistency.

High as these capacities are, our research and development department is constantly searching for ways and means of making them even higher. As new capacities (and other improvements) are attained they will be announced. Watch for them.

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Power Situation Reported Acute at North Bay

Hydro-Electric Commission of Ontario May Have to Curtail Energy Until New Supply Is Available From Generating Plants of Abitibi At Sturgeon Falls — Special De-Inking Machine Perfected and In Operation At Westminster Plant, British Columbia

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, January 12, 1931—Of interest to paper mills in the north was the announcement this week by the Hydro-Electric Power Commission of Ontario, in the form of a warning to power users in North Bay and other centers supplied by the Nipissing system, that the power situation in the district was acute. Unless the consumption is greatly reduced the Commission may find it necessary to discontinue for the greater part of each day the use of energy for commercial and industrial purposes until the new supply of power is available from the generating plants of the Abitibi Power and Paper Company at Sturgeon Falls. The Commission expects that sufficient power to meet the requirements of the system will be ready about January 15. Most of the poles for the transmission line have been erected and placing of crossarms and stringing of the wires have commenced. The Commission attributes the Nipissing situation to an exceptionally dry season in the summer and fall. The generating plants of the system are located on the South River, and there is not sufficient river flow to fill the reservoirs to keep the plants operating during the winter months. When it became apparent to the Commission, according to their statements, that there would be no fall rains, arrangements were made immediately to get a supply of power from Sturgeon Falls. Contruction of the transmission line began several weeks ago. It was hoped that the additional power to be obtained at Sturgeon Falls would be available before shortage threatened.

Ontario Man Adopts New Process

A long sought process for producing pulp from old newspapers and magazines culminated a few days ago at the Westminster Paper Company plant in British Columbia, with the perfection and operation of a special de-inking machine. The development has been simmering for the past couple of years following the invention of equipment for that purpose by a Vancouver man. J. J. Herb, of the Westminster Company, and formerly of the Interlake Tissue Mills at Merritton, Ont., became interested and after exhaustive experiments and changes has at last got the new machine operating efficiently. The development is believed to be one of the most important in the paper-making industry in recent years and the patents are held in every country in the world by the Canadian inventor. The Westminster Paper Company for its share in the invention pays no royalties, while J. J. Herb, for his vital help, has an interest with the patentees. The purpose of the new machine, according to word from Vancouver, is merely to take all the ink and coloring matter out of printed newspapers and magazines. A complicated washing process had to be devised to attain this purification. The results leave a 98 per cent pure pulp, whiter and smoother than the original pulp put into the newspaper or magazine. A total of $22,000 has been invested in the de-inking equipment at the Vancouver plant. This investment is already paying its way in the saving derived from salvaging all newspapers as against buying new wood pulp, according to the company.

Installation of a better shredding machine shortly will complete the process to an almost perfect state. Old newspaper and magazine stock is first chopped up and then mixed with water and chemicals to dissolve the inks. The resulting dirty pulp is then sent through the washing process which yields pure white pulp again. Mr. Herb had designed the first machine at the time of the paper mill fire. When the mill was rebuilt a special room was added and equipment was ordered. For the past six months changes and adjustments have been made until now a steady production of clean, clear pulp is taking place at the mill. The pulp is now being manufactured into high grades of tissues and paper napkins.

Wirebound Boxes in Good Shape

The earnings of Canadian Wirebound Boxes, Ltd., for the first seven months of the current fiscal year, up to November 30, 1930, amounted to approximately $125,000. The new corrugated division in the Toronto plant is now in operation and this gives the company a complete unit both in Toronto and Montreal for corrugated containers and packing and wirebound boxes. In addition the concern has purchased outright exclusive rights for all Canada for the Pfister patent ironbound fiber box. This gives the company control for Canada of all the important patented shipping containers.

Notes and Jottings of the Trade

R. I. Finlay, president of the United Paper Mills, Spadina Avenue, Toronto, and Mrs. Finlay, spent the New Year holidays in New York City.

A recent visitor to Toronto was W. H. Sherriff, formerly head of the Hodge-Sherriff Paper Company, Toronto, and now in charge of the London, England, office of the company. Mr. Sherriff left Toronto several years ago and has since been living in England.

R. T. McLean, of R. G. McLean, Ltd., one of Toronto's leading printing firms, was the host of over four hundred needy boys at the Central Y. M. C. A. on January 23. With the assistance of Geo. C. Winlow, of the Alliance Paper Mills, Mr. McLean distributed substantial gifts to each lad. It was the sixteenth annual McLean Christmas tree.

Ivan Moffitt, secretary of the Canadian Paper Trade Association, with office on Bay street, Toronto, has sent out notices for the annual meeting of the organization to be held in Montreal on January 22 and 23.

The Canadian Paperboard Company, Ltd., Toronto, which was closed down for a couple of weeks over the Christmas and New Years holidays, has resumed operations again.

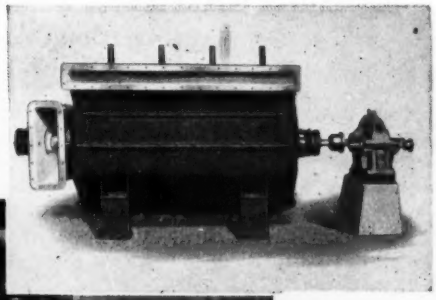
C. V. Hodder, secretary of the Canadian Paper Box Manufacturers' Association, has called the annual meeting of the Toronto Carton Council for the King Edward Hotel on January 26.

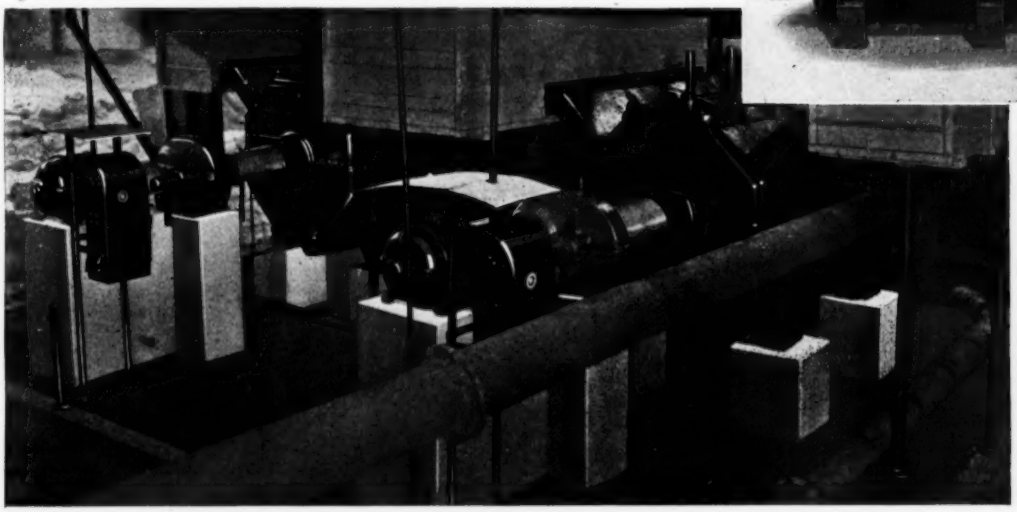
Scott & Harvey, paper box manufacturers, Toronto, have moved into more commodious quarters on King street West, above Spadina Avenue.

G. R. Lane and family, Grand Pere, Que., have arrived in Toronto, where they will in future reside. Mr. Lane was formerly connected with the Forestry staff of the Canada Power and Paper Corporation at Grand Mere.

The Pejepscot Paper Company will cut pulpwood this winter in the Seeley Beach section of New Brunswick, which is only a few miles up Salmon River from the permanent base of the company. George Wallace, of Sussex, has been directing the cutting of the pulpwood this year. He says the company gave employment to about three hundred men, during the year, which is about two hundred in excess of the usual number. The shipping of the wood to Bath has been in barges, which are towed by the ocean going tug, *Pejepscot*. The transportation of the wood has been discontinued for the winter, to be resumed in April.

NOW the Valley-Thune Rotary Screen..





Less Floor Space
Less Upkeep Expense
Less Noise
No Vibration
No Overflow
No Leakage
Greater Capacity

uses FLAT, SLOTTED PLATES

And now . . . . a conclusive test in a large, nationally-known mill . . . . has proved the success of another Rotary Screen improvement which further reduces maintenance costs. *Flat, slotted plates are now being used in the Valley-Thune Screen . . . . the same type of plate now in use on your Diaphragm Flat Screens.* The new flat plates not only turn out consistently CLEAN PULP (as clean as the finest flat screens) . . . but they strengthen the drum and reduce vibration to practically nothing. If the old-type rotary screens with perforated plates have made you prejudiced against rotary screens . . . . the time has come to banish that prejudice. Because the flat, slotted plates of the Valley-Thune have successfully whipped the problem of pulp cleanliness. The factor of greater economy, of course, is self-evident. Write the Valley Iron Works Co., Appleton, Wis., for complete facts.

VALLEY
Equipment for Paper and Pulp Mills

New York Offices: 350 Madison Ave.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

Pennsylvania Mills Key Production to Demand

Keystone State Paper Manufacturers Are Carefully Watching Trend of Business Before Expanding Output Materially—Although Stocks Are Reported Low, Dealers Are Also Lingering Along Awaiting Revival of Buying In New Year.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 12, 1931—As reported by the Philadelphia Federal Reserve Bank, the Philadelphia paper trade opened the new year with cautiousness and stocks at low ebb. While the trade has been more or less inclined to linger along pending the revival of buying in the new year, as forecasted so freely by those competent to survey coming events in industry for 1931, there is some attention being given to inspection of new lines offered by the manufacturers. The mills, too, are watching the trend of business and while distributors hold up stocking the manufacturers are keying schedule of production to meet the limitations of buying. Prices are now at the lower levels of the old year and can hardly be revised still further, as reduction would entail loss to the manufacturers. Many of the distributors believe that dealers should become more courageous and buy now while prices are so attractive.

Inventories now being made by the Philadelphia wrapping paper dealers and in a few of the fine paper lines show losses of from 5 to 15 per cent over the early values of the past year. This scaling of values under present conditions is in line with expectations, as every paper dealer expected to be subjected to adjustments that have been going on for the twelve month period. but the brighter side is the growing confidence of the Philadelphia Paper Trade Association in the ability of its members to bring about more stabilized markets through actual recording of trading conditions in monthly statistics that will guide in the upward stride of the industry in the current year. It is a commendable and worthy factor in the paper trade and has the hearty cooperation of all, as indicated by the large number of houses who have joined in the cause. This phase of constructive work will be a paramount factor of the annual meeting to be held in late January, when officers will be nominated for the new year. Announcement of the date and place of meeting will be made later.

Arthur B. Sherrill Acquires Mill Agencies

Arthur B. Sherrill, former president of the Philadelphia Paper Trade Association, and for 25 years treasurer and general manager of Reigel & Co., has acquired the Philadelphia territory representation for the B. M. Bare Paper Company, Roaring Springs, Pa., and for the Hawthorne Paper Company, Kalamazoo, Mich. With the acquisition of these mill agencies he has taken offices in Room 226, Lafayette Building. Removal to the new offices was made from the former headquarters of Riegel & Co., now occupied by Paper Merchants, Inc. Mr. Sherrill, will feature the book papers made by the Bare company and the fine paper lines of the Hawthorne Paper Company, in Philadelphia and surrounding territory.

B. W. Jennings Joins Dill & Collins Co.

Announcement was made in the week of the resignation of W. H. Lloyd, former sales director of the Dill & Collins Company, fine paper manufacturers, and the appointment of his successor. B. W. Jennings, who as announced, comes to the Dill & Collins Company with a successful record as a merchandiser, and has joined the firm as director of sales, taking over the former duties of Mr. Lloyd. The sales policy of the firm will continue as heretofore in the distribution of the standard Dill & Collins lines through recognized dealers. President Grellet Collins, in making announcement of the changes effective with the new year, states that he belives 1931 will be a year of greater stability of business.

American Bag & Paper Co.'s New Product

A special type of coal sack has been developed by the American Bag and Paper Company, manufacturers of bags, in a kraft bag with duplex lining providing for moisture proof protection to contents. The firm has added four new machines to the equipment and with the installation of the bag machines, printing devices providing for two color imprints. There is also produced shopping bags. The firm has been exceptionally busy in the past few weeks and has provided for the increased business by the addition of the new units.

Morriss Kardon Adds To Plant

Morris Kardon, manufacturers of shipping containers and folding paper boxes, 220-226 Pine street, has expanded production and constructed an addition to his plant. The new addition includes the building at 226 Pine stree, which has been rebuilt into modern offices with production plant in the rear. This gives the firm 18,000 additional square feet of space and provides for 20 per cent increase in output. The plant now occupies three buildings, owned by the firm.

Union Bag & Paper Corp. In New Quarters

Philadelphia branch offices of the Union Bag and Paper Corporation, now are settled in the new quarters acquired with the early days of January. The offices, under management of William C. Maxwell, occupy Suite 1016 in the Terminal Commerce Building.

Benjamin C. Betner Co. Extends Plant

Under the expansion plans of the Benjamin C. Betner Company, Devon, Pa., just outside Philadelphia, there will be added to the units several new machines which will be imported from Germany. These new machines will be installed by March and ready for operation in the spring. The new units were bought by President Betner on his recent trip to Europe from which he returned in November. In addition to the expansion of the units the bag manufacturers have completed in the past year another building 80 by 200 feet for its duplex coffee, tea, confectionery, garment, chocolate coating and general lines of bags. With the installation of the new machines the firm will be in position to add many new assortments of bags not heretofore produced in printed and plain grades.

Menasha Products Co. Adds Can Unit

Having completed the erection of a plant that will provide for the manufacture of paper cans in its Baltimore branch factory and warehouses, the Menasha Products Company, with Philadelphia offices at 1528 Walnut street, and headquarters in Menasha, Wis., is now offering the latest lines to the paper and other trades. The new paper can division is located at Paca street and Leland Avenue, Baltimore and produces a line of paper containers adapted for food products. These will augment the lines already established, including ice cream cartons, printed butter cartons, round containers, slide boxes for the ice cream trade, ice cream cannisters, oyster cans, and others. George Sherburne is manager of the Philadelphia division catering to the paper trade, jobbers, and distributors generally. He is also featuring the line of packages and embossed and full crepe, semi

Showing a hot bar being drawn from the furnace where it has been held at a certain carefully measured temperature for a certain length of time.

Showing Bars on Drain Rack after the "Oil Bath" which follows the heat treatment.

The Brinnell Test of a Fly Bar. Each Bar is subjected to this exacting test.

"70 MONTHS OF CONTINUOUS SERVICE . . . . .

. . . . . beating raw rags for roofing stock," that's the comment made about our Fly Bars by one of our customers.

Such service is not unusual with Dilts Fly Bars because they are tempered so carefully to a degree which we know is best for the stock on which they are to be used. We know the exact limits of hardness and softness best adapted for the work to be done.

Years of experience in making Fly Bars has taught us how to best produce them, and how to make sure of uniform hardness and toughness in each Bar.

It has been proven in many cases that our heat treated Fly Bars reduce operating costs.

Ask for our recommendations. Estimates gladly furnished.

— Dilts —

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made in Your Beaters"

crepe and machine crepe products in flat and folded styles, dispensary napkin services, and broad assortment of package goods such as picnic sets, combination napkins and table clothes, bridge sets, delicatessen requisites, wax papers for commercial purposes such as bread wraps, and allied lines. Edmund Murphy is manager of the department handling direct consumer business, and spent the holidays at the Menasha headquarters and his former home in Chicago.

Cherry River Paper Co. On Full Time

With the recent tour of the mills of the Cherry River Paper Company made by President Fred L. Space, whose headquarters are in Scranton, Pa., to the Richwood, Va., paper manufacturing plant, announcement was made that the company is now operating on full time with the abatement of the water shortage in that section which necessitated curtailed operations. Now that the water supply is back to normal as the drought wanes, the company is going ahead with full schedule on its sulphite specialties ordered for the current years stocking. President Space reports satisfactory conditions on his return to his offices at the Scranton headquarters of the Cherry River Boom and Lumber Company, of which he is head.

New Moth Proof Bags For Kennedy Car Liner

A new line of moth proof bags is being introduced to the trade by the Kennedy Car Liner and Bag Company, in the Philadelphia offices, made at the plant of the firm in Shelbyville, Ind. The Philadelphia offices at 4625 Sansom Street are showing the latest comers in the Supreme and Exlo Cedar Bags, made with white lining, so that he contents are protected against soiling. They come in the regulation sizes. Manager Charles Tucker is now taking orders for the current year's stocking.

Peerless Paper Mills Offer New Line

A new line of sanitary rolls is offered by the Peerless Paper Mills, of Oaks, Pa., near Norristown, in a white tissue of high grade quality. This new line was offered to the Philadelphia dealers in the early days of January by Treasurer Shepard who introduced the new rolled product as of specially fine texture and in white only.

Orchard Paper Co. Introduces Lines

Philadelphia paper distributors were introduced to an appealing, attractive assortment of paper in brilliant modish shades by the Orchard Paper Company of St. Louis, Mo. The 1931 lines are displayed in booklet form of highly pleasing shades of wrapping papers and printing papers adapted for second sheets and of light weight grades for printers and stationers supplies. There is also offered the 1931 line of notion bags in equally brilliant shades.

W. W. Seary Recovers

First Vice President W. W. Seary, of the D. L. Ward Company, Terminal Commerce Building, Broad and Race streets, who has been seriously ill with pneumonia since last November, has recovered and returned to his desk. He resumed activities in the first week of January.

Paper Manufacturers New Stay Paper Popular

Having in the late months of the past year developed its latest additions in gummed kraft papers the Paper Manufacturers Company, 5th and Willow streets, has opened the new year with a gratifying demand for the stay papers produced for the box manufacturing industry. These latest comers are known as the Kraft Weld Stay Papers. These have been used by the box trade and reported as moisture proofed and usable in all kinds of weather. The stay papers are produced in strips of 90 lbs. high grade kraft, gummed with high grade of processed glue which provides against moisture and damp weather, ¾ to ⅞ inches wide, comes in rolls with scored or creased centers that adheres and adjusts instantly. Climatic conditions do not effect the stay papers as they are so perfected that they work accurately in extremely cold weather as well as in dampness, as tested in the recent cold spell by box makers. Free samples are being sent to the trade by the Paper Manufacturers Company, as distributors are contacted by the firm under the campaign on the new line conducted by President Frank A. O'Neill and his staff. The gummed rolls in Kraft Weld lines which recently were added have also been expanding.

Allied Paper Manufacturers Co. Dissolves

The Allied Paper Manufacturers, which about two years ago engaged in the sale of card boards and paper boards, and with offices at 1711 North Philip street, has dissolved and the business discontinued. The firm was a subsidiary of the wholesale rag dealing concern of Spector & Co., for many years in the paper mill supply business at the Philip street address.

Parsons & Whittemore Explain

New York, January 12, 1931

EDITOR PAPER TRADE JOURNAL:—

In your December 25, 1930 issue you published under "Hammermill Protects Luna Bond" an article which gives a very erroneous and unjust account of what took place.

The facts are that Parsons & Whittemore, Inc., received from a customer of theirs in the Argentine an unsolicited order to make up some sulphite bond and water mark it Luna Bond. We were informed that the firm in the Argentine placing the order controlled the water mark for the Luna Bond, and the Hammermill Paper Company had no rights in that country and could not sell the Luna Bond in the Argentine. Until the Hammermill Paper Company's complaint was received, we assumed we had the right to manufacture here for any foreign customer who controlled the rights for the use of the mark in his own country. Parsons & Whittemore, Inc., did not solicit the order for Luna Bond in the Argentine, nor in any other market. Furthermore, they have executed only two orders for this water-mark.

Without bringing the subject to our attention the Hammermill Paper Company brought suit. As soon as we were informed that the Hammermill Paper Company controlled the mark Luna Bond in this country covering the manufacture regardless of where sold, we immediately offered to discontinue the execution of such offers and refuse to enter further business for such mark.

We would very much appreciate your publishing this letter for the purpose of correcting any misunderstanding of the facts which may have been conveyed by your former article.

Yours very truly,

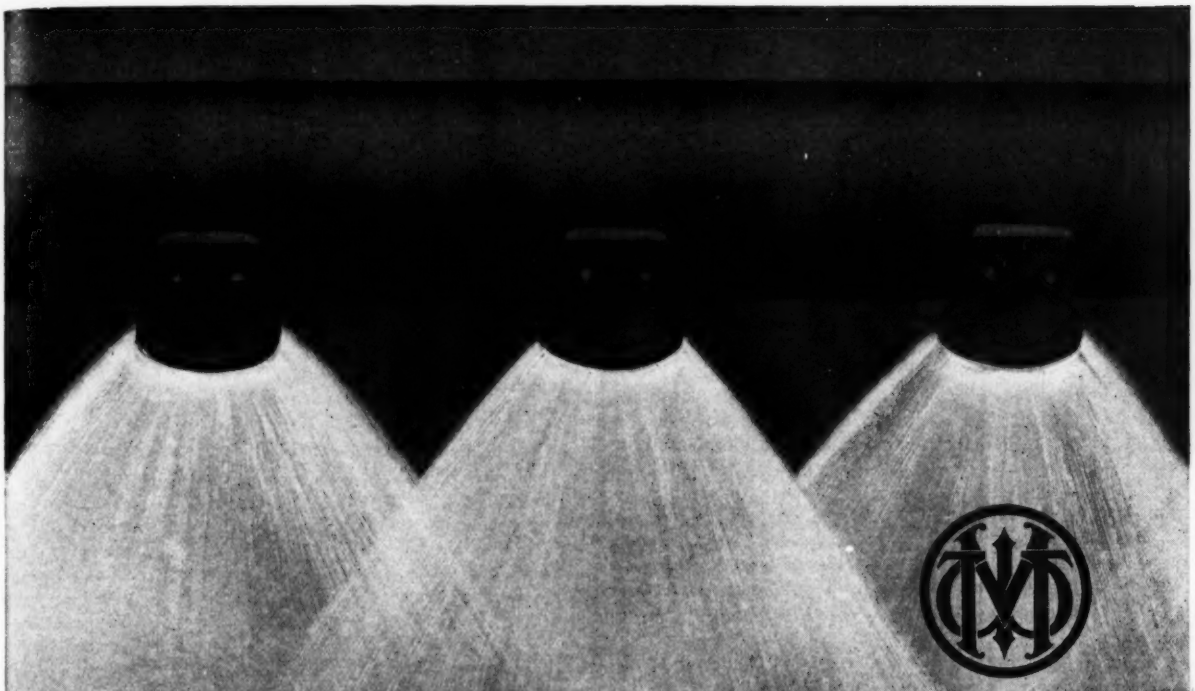
PARSONS & WHITTEMORE, INC.

HOWARD WHITTEMORE, *President*

New Chicago Pump Co. Bulletin

The Chicago Pump Company, with general offices and plant at 2336 Wolfram street Chicago, Ill., announces the publication of a new and complete bulletin on Non-Clogging Pumps, of the Enclosed Shaft Type (the Open Shaft Bulletin was announced last month.) This piece of literature is claimed to be the most comprehensive data on Non-Clogging Pumps available. Single and Duplex Units are shown and all improvements and advances in design are treated in detail, such as "tongued-and-grooved" construction, "flexible joints," "Micrometer adjustment," and the "Automatic Alternator."

Blue prints of many different types of installations are submitted together with architects and consulting engineers specifications which make the literature very valuable. Tables of capacities, heads and horse-power are also given, so that anyone contemplating the use of a Non-Clogging pump has all he needs in one piece of literature. The new Enclosed Shaft, Non-Clogging Pump Bulletin is numbered 128. All architects, engineers, sewage disposal superintendents, etc., interested in this type of pump may receive a copy on request. The Open Shaft Bulletin is numbered 126,—both may be had if desired.



You will be interested in the new Shower Pipe Bulletin, just published.

Economy that counts

Of course, water is worth saving. When it has to be filtered and pumped, and especially when streams are low, it is too valuable to waste.

But water is only a trifle in the cost of paper. To skimp on the showers, for instance, is to risk spoilage of the product.

"Criss Cross" Showers are economical without skimping. Their patented nozzles make a concentrated jet with the most effective angle of impingement. The orifices are too large to be clogged by stray fibres. They do a real job, using only as much water as a real job demands.

As for economy, a user writes: "Your Shower takes approximately 30% less water at 45 lbs. pressure, and gives a much more effective spray" than another make of shower tested.

Try a "Criss Cross" at our risk for 30 days.

THE MOORE & WHITE COMPANY
Established 1885
15th ST. & LEHIGH AVE. PHILADELPHIA, PA.

"CRISS CROSS" *shower pipes*

Obituary

Harry S. Coke

The death of Harry S. Coke, for many years manager of the Maine Coated Division of the Oxford Paper Company, occurred on Tuesday morning last at the Knickerbocker Hospital, New York City, where he had been taken several weeks before for treatment.

While Mr. Coke had been in failing health for a long period, and lately had become worse, his death nevertheless came as a great shock to his friends and business associates. Following services at the Fairchild Chapel, Brooklyn, N. Y., the remains were taken to his former home, Otsego, Michigan, for burial.

Mr. Coke was born in St. Louis, Mo., 53 years ago. As a young man he was connected with the Butler Paper Company of that city, later representing that company in Chicago. Subsequently he became affiliated with the Bardeen Paper Company at Otsego, Michigan, eventually becoming Superintendent of the plant, and from there went to Rumford, Maine, in the fall of 1913, to organize the Maine Coated Division of the Oxford Paper Company, then newly built. Mr. Coke was manager from the start up to the time of his death, and was active in local civic affairs, associated with lodges and organizations, and in constant contact with a great number of residents of Rumford and other communities.

He was a director of the Oxford Paper Company, and also a director of the Rumford National Bank. An enthusiastic golfer, he founded the Oakdale Country Club at Rumford, and was its president until the time of his death. Intensely interested in local affairs, he served on the Town and Corporation Governing Committee of fifteen members. He was a member of the Masonic Order, a Shriner of Kora Temple, Rumford, a member of the Commandery there and of the Blue Lodge at Otsego, Michigan, and of the Rumford Rotary Club. He had a coast to coast acquaintance by reason of his position in the paper industry and his various affiliations. His passing will be keenly felt, not only by his associates, but by every one who has known him.

Edward J. McCorkendale

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 12, 1931.—Edward J. McCorkendale, president of Paper Merchants, Inc., 140 North 6th street, passed away on January 7 at his home 8105 Ogontz avenue, Elkins Park, a suburb of this city, following two weeks illness from pneumonia. He was 55 years of age. Mr. McCorkendale became president of Paper Merchants, Inc., the reorganized Riegel Paper Company, which for many years was engaged in the fine paper trade in this city. He was associated with the companies for 26 years. Prior to the organization of Paper Merchants, Inc., he was on the sales staff of Riegel & Co. and with the formation of the former company, whose officials were associates of the latter concern two years ago, he became president of the new body which took over the controlling interests. He was on the advisory committee of the Hammermill Paper Company. Surviving are his widow, Elizabeth M. McCorkendale, two married daughters and a minor son.

Angus McLean

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 12, 1931—Angus McLean, vice-president and general manager of the Bathurst Power and Paper Company, Ltd., of Bathurst, N. B., died here today. He came to Montreal just over a week ago to undergo an operation, but failed to rally after the operation had been performed.

Mr. McLean had long been a notable figure in the pulp and paper industry. He was born at Thurso, Que., in 1860. His father was engaged in the timber business there, and took rafts of square and flattened pine and cedar down the Ottawa River to Montreal.

Mr. McLean made his first trip to Montreal on a raft with his father in 1874, and had been engaged in forest industries ever since. He was for a time in business in Buffalo, N. Y., with his brother, Hugh McLean, under the firm name of Hugh McLean & Co. He returned to Canada in 1909 to become the general manager of the Bathurst Lumber Company, Ltd., which he developed from a lumbering concern to a major pulp and paper industry, now known as Bathurst Power and Paper Company.

At the time of his death he was president of the Canadian Chambers of Commerce. He was a past president of the Canadian Lumbermen's Association and had been president of the Canadian Pulpwood Association from its inception in 1924. He married Ida Florence Chamberlain, daughter of George Washington Chamberlain, in 1883, and had two sons and three daughters.

Situation Better in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 12, 1931.—With inventories completed for the most part, the paper trade in central Indiana is giving its attention to prospects for orders. The new year, while not setting any new records for the first week or so, started in fairly well. There was not so much holiday stock left as to create a big burdensome problem, but there will be some carried over. With all stocks held as low as they were during the year, it is not unusual that paper jobbers will have to enter the market rather early this year. This applies especially to the wrapping paper field. In this field stocks were held as low proportionately as in the fine paper field, but the holiday demand for wrapping paper seemed to be better than that for fine papers, with the result that stocks of them are much lower.

Clothing containers, glassines, boxes, waxed papers, tissues, corrugated rolls and hard paper containers, all sold well. The factories in Indiana report a general slowness of orders, but predict that before the end of the month the situation will be entirely changed.

Manufacturers and jobbers of building papers believe this will be a much better year than 1930. Stocks in the hands of dealers are very light and the first hint of spring building weather will force them all to the market.

All things considered, the trade seems going into the new year much better fixed than a year ago. Some jobbers and manufacturers report the only fly in the ointment that does not show signs of escaping, is the credit situation. During the past year there has been a general tightening in credits and more will have to be done along this line to bring down loss percentages.

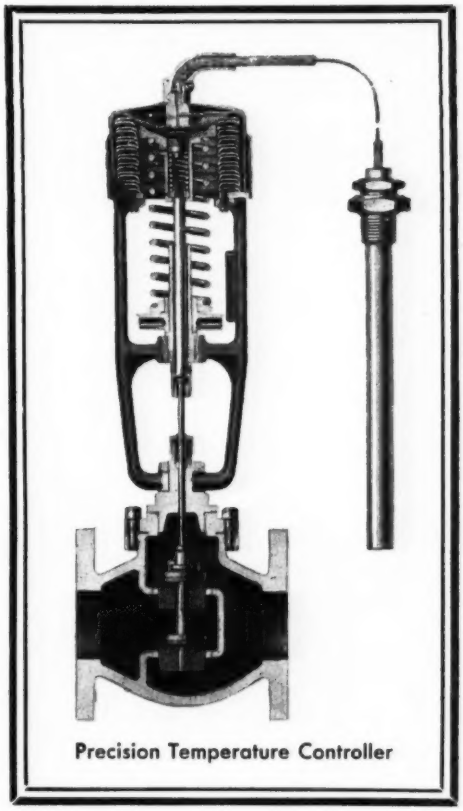
New General Telegraph Code Book

The Writing Paper Manufacturers Association, with headquarters at 95 State street, Springfield, Mass., has just issued a new general telegraph code book for use in communications relating to writing, cover and book papers. On the inside cover there is a pocket in which may be placed a list of special code words for a mill's own individual lines. This new code book will become the regular means of telegraph communication used by the writing, cover and book paper mills and will prove invaluable to general paper merchants in particular.

New Speed Reducer Bulletin

A special bulletin covering the new line of worm gear speed reducers developed by W. A. Jones Foundry and Machine Company, 4401 West Roosevelt Road, Chicago, Ill., has just been published. These reducers are for small electric motor drives—capacities up to seven hp.—ratios 5-1 up to 50-1. They supplement the Jones heavy duty line of speed reducers. A copy of this bulletin will be gladly sent to any one requesting it.

OPENS AND CLOSES . . .



Precision Temperature Controller

60,000,000 times!

To maintain critical temperatures within a single degree, the American Precision Controller has an effective life of sixty million operations.

This extraordinary life has been made possible by the development of a bellows, now built into all American Precision Temperature Controllers and Pressure Controllers from ½ inch to 4 inch sizes inclusive. The bellows is constructed from single diaphragm units of phosphor bronze sheets tempered to the desired hardness, and tinned. Each unit is cupped near the edges to prevent bending strain, and corrugated for extra strength.

Thus the controller, a sensitive, *precision* instrument, is made as durable and dependable as any piece of equipment with which it is used.

You can make no finer equipment investment in your plant than to install American Controllers...for they will save fuel, material, labor and time, as well as guarantee increased output and uniform production.

CONSOLIDATED ASHCROFT HANCOCK CO., INC.
Bridgeport, Conn.
Subsidiary of Manning, Maxwell & Moore, Inc.

CONSOLIDATED ASHCROFT HANCOCK

American PRECISION CONTROLLERS

Specify Catalogs Desired:

American Dial Thermometers	G-9	American Recording Gauges	E-9	Consolidated American Safety and Relief Valves	Z-9
American Glass Thermometers	F-9	American Draft Gauges	B-9	Hancock Bronze Valves	WB-9
American Recording Thermometers	H-9	American Gauge Testers	D-9	Hancock Cast Steel Valves	WA-9
Ashcroft American Gauges	A-9	American Tachometers	J-9	Hancock Forged Steel Valves	W-9
American Temperature Controllers	R-9	Ashcroft Power Control Valves	M-9		

New York Trade Jottings

Harry P. Gould, president and treasurer of the Gould Paper Company, Lyons Falls, was a New York visitor last week.

* * *

Patrick J. Palmieri has joined the working forces of the Colonial Paper Company, dealers in paper makers supplies, of 59 Rose street, Brooklyn, N. Y., owned and operated by John Ragonetti.

* * *

Bellin, Feinberg & Hecht, paper products, have been incorporated under the laws of the State of New York with a capital stock of $10,000. S. I. Wallerstein was the attorney.

* * *

The Taylor Paper Company has been chartered under the laws of New York State with a stock of 100 shares common. Poore & Webster, of 9 Park Place, were the attorneys.

* * *

G. A. Vollmer, formerly vice-president of the Kieckheffer Container Corporation, and C. H. Andrews, formerly of the Robertson Paper Company, have joined the sales staff of the Robert Gair Company, 420 Lexington Avenue, New York City, where they will assist in the expansion of container and folding box sales.

* * *

Aaronson Brothers, of 7-11 Greene street, New York, announce the opening of a branch at 10 High street, Boston, Mass., from which center they will distribute their enamel papers, both in perfects and seconds, throughout New England. George H. Grauer is in charge of the Boston branch.

* * *

Major Oliver M. Porter, manager of the National Kraft Paper Manufacturers Association, with headquarters at 122 East 42nd street, New York, has returned from Washington, D. C., after conferring with Secretary of Labor Doak, Assistant Attorney General O'Brien, and other Government officials relative to problems in the kraft paper industry.

* * *

The Annual Banquet of the New York Association of Dealers in Paper Mills' Supplies, Inc., will be held at the Hotel Commodore, Tuesday evening, February 17, 1931, in the East Ballroom. The usual high class entertainment and dinner will be provided for the members and the mill men who will be guests. The date is during the Convention Week of the American Paper and Pulp Association.

* * *

S. P. Weston, of S. P. Weston, Inc., well known newspaper engineers and consultants, of 420 Lexington Avenue, New York, gave an exceptionally interesting and instructive address on "Trends of Newspaper and Magazine Advertising" at the regular weekly meeting and luncheon of the New York Division of the Salesmen's Association of the Paper Industry last Monday, at George's Restaurant. Mr. Weston discussed the results of an intensive survey made by his organization of 26 leading newspapers in 26 major cities. He analyzed the decline in advertising and number of pages printed during 1930, giving special attention to the Sunday editions which he stated have been losing ground steadily since 1925. Regarding broadcasting, the increase of radio advertising had materially benefitted the newspapers, declared Mr. Weston, and lineage amounting to approximately $31,000,000 was directly attributed to this cause.

Ross Systems for Becker, Smith & Page, Inc.

Ross Wall Paper Drying Systems for new 12 color machine and sanitary machines together with heating systems are being installed in the mill of Becker, Smith & Page, Inc. Philadelphia, Pa. All this apparatus is to be furnished by the J. O. Ross Engineering Corporation.

Boston Paper Trade Happenings

BOSTON, Mass., January 12, 1931—E. H. Little, buyer for John Carter & Co., Inc., attended the presentation of the Perkins Medal to his brother Dr. Arthur D. Little, of Cambridge, in New York, Friday, at a joint meeting of the Society of Chemical Industry, the Societe de Chimie Industrielle, and the Electrochemical Society, in Havemeyer Hall, Columbia University. This medal is awarded "to the American chemist who his distinguished himself by his services to applied chemistry."

Arthur E. Ham & Sons are delivering to the trade a portfolio of the entire Worthy line of papers, made by the Worthy Paper Company, West Springfield, Mass. The portfolio contains some very beautiful specimens of work done by a number of the best known printers of the country.

Hubert W. Lockhart, of the Von Olker-Snell Paper Company, has been elected president of the corporation to take the place formerly held by Perry D. Von Olker, who recently died.

The Globe Paper Company is now selling exclusively in New England the lines of the Champion Coated Paper Company, Hamilton, Ohio.

The Deerfield Glassine Company have two new designs on their embossed papers and have added a grade in the regular lines of glassine.

G. D. Allen, vice president and treasurer of Knight, Allen & Clark, Inc., sailed for a trip to the West Indies, Friday, expecting to return in about three weeks.

E. Davey Dodd, vice president, and John E. Dodd, secretary and treasurer of the Davey Company, Jersey City and Downingtown, N. J., manufacturers of binder board, were in Boston Thursday.

Arthur C. Hall, treasurer and manager, John Carter & Co., Inc., has gone on a motor trip to the South.

Holyoke Paper Men Attend Shippers Meeting

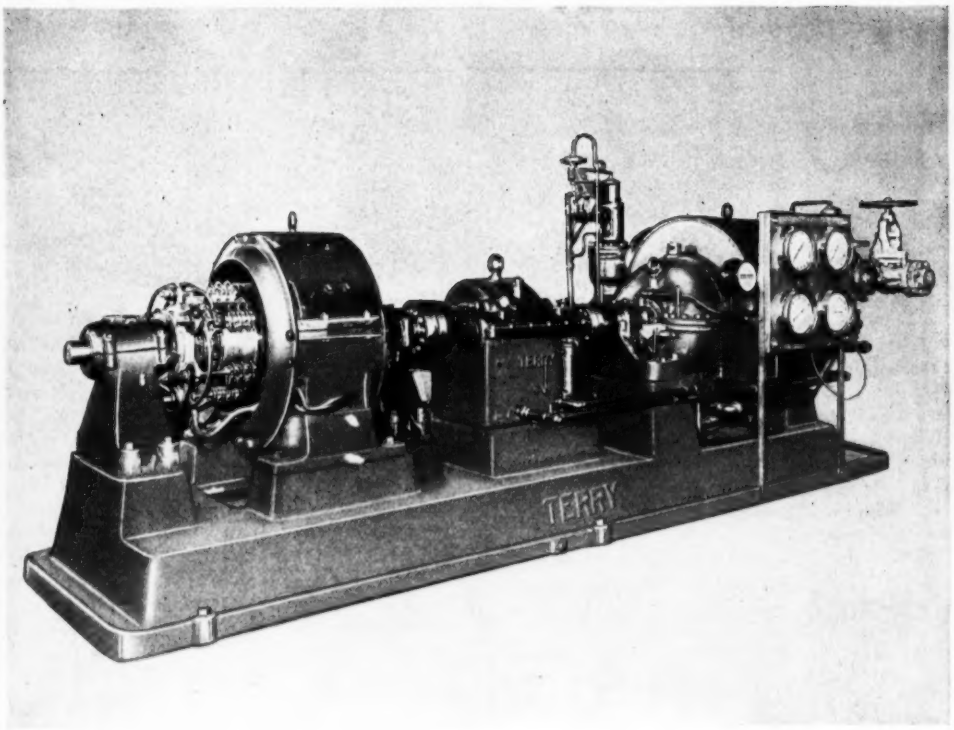
HOLYOKE, Mass., January 13, 1931—A hearing largely attended and of much importance to paper mill manufacturers as well as other shippers was held Monday of last week at the Hotel Nonotuck under the auspices of the Holyoke Chamber of Commerce to learn the plans of the New Haven and Boston & Maine Railroad as to consolidation of their two freight houses. Sidney L. Willson, president of the American Writing Paper Company, Inc., asked a number of questions and stated that he was not convinced of the economy of operating over the tracks as planned. The American Writing Paper Company is the largest single shipper out of Holyoke.

It developed under questioning by Mayor William T. Dillon, that the abandonment of the Holyoke & Westfield Railroad owned by the city but leased to the New Haven road on a guaranteed return of 14 per cent or $46,000 a year was probable. Opposition rose on this account. It was finally voted to have the road submit its detailed plans in writing at a later meeting.

Two-Way Paper Deal Reported Agreed

The implications behind this weeks sudden improvement in the market status of Abitibi Power and Paper Company and St. Lawrence River stocks on the Toronto Stock Exchange was borne out by fairly definite statement that a merger plan between the two companies has been arranged. At the same time it was definitely learned that there is nothing in the paper situation at the Abitibi plants and offices to warrant the higher prices of the company's stock. It was learned that Abitibi's business at the moment is not on a high level and it was stated that unless fresh orders are received soon the Fort William mill of the company would have to close within a few days. It was also learned that the rumor from Sault Ste. Marie regarding re-opening of the mill there was false. It will probably remain closed throughout the winter. In the meantime the city authorities there are endeavoring to collect higher taxes in compensation for losses through unemployment arising from the shut-down.

TERRY



FOR RUGGEDNESS AND HIGH EFFICIENCY

This 200 K.W. Terry Turbo Generator unit was recently purchased by an Eastern municipality.

The turbine is designed to operate with steam at 315 lbs. pressure and 200° superheat. It is arranged to bleed varying quantities of steam at 5 lbs.

The city engineers, in selecting a Terry unit for this installation, did so on the basis of dollar for dollar value, ruggedness of construction and high efficiency.

The TERRY STEAM TURBINE COMPANY
TERRY SQUARE, HARTFORD, CONN.
Steam Turbines - Gears - Shaft Couplings

T-1062

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Middletown, Ohio—The Raymond Bag Company, Middletown, has asked bids on general contract for proposed new plant unit on tract of 16 acres of land on the Dixie Highway, recently acquired, consisting of a main one-story unit for straight line production with approximately 110,000 square feet of floor space, reported to cost close to $300,000, with equipment. Company will remove present works to new location, providing considerable new equipment for large increase in output of paper bags and containers. It is understood that general contract will soon be let and superstructure placed under way. Lockwood, Greene Engineers, Inc., Hanna Building, Cleveland, Ohio. are architects and engineers.

Bogota, N. J.—The Continental Paper Company, Bogota, is carrying out an expansion program in its power department, to provide for increased capacity and efficiency. Contracts for equipment will be arranged at once and among these the company has placed an order for a turbine unit, paper machine drive, switchboard and instruments, reported to cost about $135,000.

New York, N. Y.—The Custom Paper Box Company, Inc., care of Abraham Rosen, 2660 Marmion avenue, New York, recently organized by Mr. Rosen and associates with capital of $10,000, is said to have plans under way for the operation of a local plant for the manufacture of paper boxes and containers. Louis Swerdloff, 2309 Holland avenue, Bronx, is interested in the new organization.

St. Louis, Mo.—The Orchard Paper Company, 12th Boulevard and Chouteau street, is said to have concluded arrangements for the lease of a two-story and basement building at Seventeenth avenue and Austin street, and will occupy for new plant, including enlarged facilities for storage and distributing service. Transfer from present location will be made at an early date.

Manistee, Mich.—The Filer Fibre Company, manufacture of kraft paper products, is maintaining production on a sizable basis, giving employment to close to normal working force. It is understood that the company will hold to present basis of output for an indefinite period.

Hoboken, N. J.—The Gatti Paper Stock Corporation has acquired from the First National Bank of Hoboken, the property now occupied at 13th and Monroe streets, comprising the entire block between Thirteenth and Fourteenth streets, or 16 city lots, aggregating 100 x 440 feet. A reported consideration of $75,000 was given for the property, which is improved with a building. As previously reported in these columns the Gatti company has practically concluded the construction of a new two-story plant unit, 90 x 192 feet, with cost approximating $40,000, and will use for expansion in storage and distributing departments.

Chicago, Ill.—The Lubin Brothers Paper Company, Inc., has been organized with a capital of $50,000, to take over and expand the paper goods company of same name with storage and distributing plant, and headquarters at 1222 West Chicago avenue. The new organization is headed by Jacob, Hyman and Leon Lubin.

Kalamazoo, Mich.—The Hawthorne Paper Company is running at close to normal schedule at its local mill, giving employment to practically the same size working force as at this time a year ago, or about 150 persons. It is understood that advance orders are only slightly less than those secured the early part of 1930. Present output will be maintained for an indefinite period.

Ridgefield Park, N. J.—The Lowe Paper Company is said to have preliminary plans under way for a new one-story addition on the River Road, reported to cost over $40,000, with equipment. It will be used in part at a lithograph shop. It is understood that Fred L. Smith, 21 East Fortieth street, New York, engineer, will be in charge of the work.

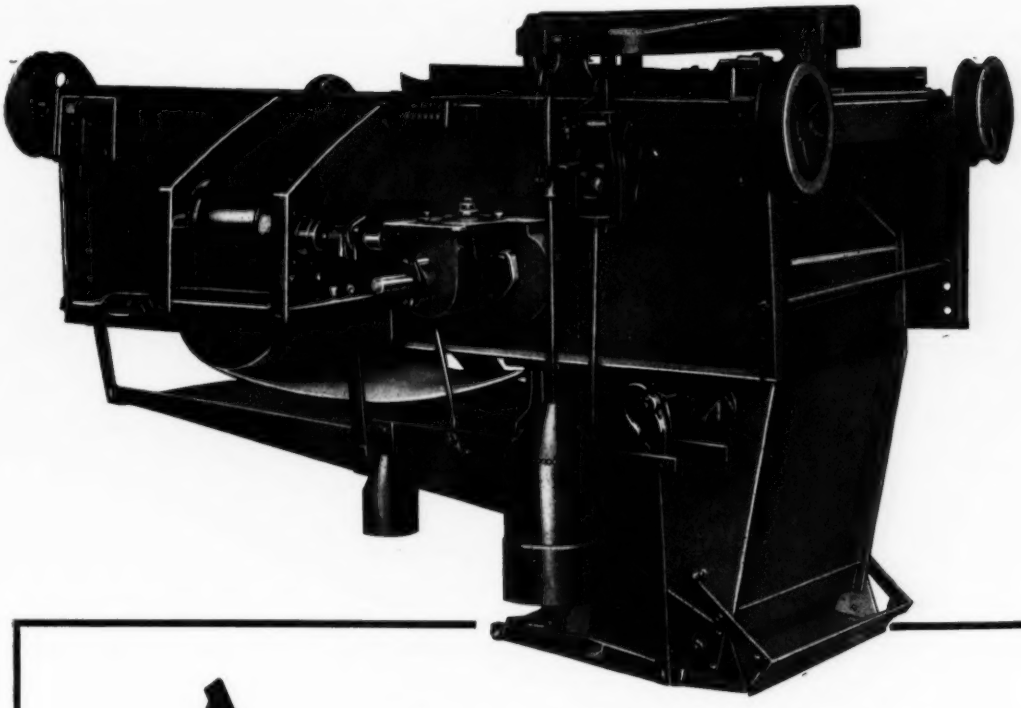
Birmingham, Ala.—Fire, January 5, damaged a portion of building of George W. Harris & Son Wall Paper Company, 2016 Fourth avenue, dealer in wall papers, etc. An official estimate of loss has not been announced. The damage will be replaced.

Los Angeles, Cal.—The Coast Paper Box Company, 1244 South Produce street, has been organized by local interests to operate a plant for the manufacture of paper and cardboard boxes and containers. New company is headed by C. C. Barry and Sayles A. Sands, 1835 Garfield Place.

Philadelphia, Pa.—Following recent acquisition of the Baeder Adamson Company, Philadelphia, by the Minnesota Mining and Manufacturing Company, St. Paul, Minn., a transfer of property of the first noted company at Allegheny avenue and Richmond street has been made. The tract comprises 22½ acres of land, improved with a number of industrial buildings, including boiler plant, etc. It is understood that the first noted company, which specializes in the manufacture of sandpaper and kindred products, will be known in the future as the Baeder Adamson Paper Mills, Inc., and will be a subsidiary of the Minnesota organization.

Philadelphia, Pa.—Fire, January 7, damaged a portion of the plant of the General Paper Box Company, occupying the upper floors of four-story building at 1421 North Randolph street. An official estimate of loss has not been made, but is understood to have been heavy in connection with finished stock.

Emeryville, Cal.—The Paraffine Companies, Inc., have completed the installation of a new high-pressure steam-operated electric generating plant for service at the mill, said to represent an investment of over $400,000. The installation is the first of its kind in that part of the country, and will supply all steam required in manufacturing processes at the mill, and practically all demands for electric light and power at the plant, including crane and machinery operation. The plant is provided with a turbine unit of General Electric type, with Babcock & Wilcox water-wall boilers, the latter operating at 450 pounds working pressure.



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A Few Users of Richardson Scales

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Hinde & Dauch Paper Co., Ft. Madison, Ia.

Champion Fibre Co., Canton, N. C.

Anglo Newfoundland Paper Co., Grand Falls, N. F.

Rising Paper Co., Housatonic, Mass.

Kimberly Clark Co., Neenah, Wis. Kimberly, Wis. Niagara Falls, N. Y.

Nekoosa, Edwards Co. Port Edwards, Wis.

Paterson Parchment Paper Co. Modena, Pa. Edgely, Pa.

Ste. Anne Paper Co., Beaupre, Que.

Price Bros., Ltd., Riverbend, Que.

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West Virginia Pulp & Paper Co., Mechanicsville, N. Y.

West Virginia Pulp & Paper Co., Piedmont, W. Va.

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COMING EVENTS

American Paper and Pulp Association, fifty-fourth Convention and Meeting. Pennsylvania Hotel, February 16-19. Annual Meeting, Thursday, February 19. Annual Banquet, Grand Ball Room, Thursday, February 19.

National Paper Trade Association of the United States. Convention, Pennsylvania Hotel, February 16-18. Luncheon, Wednesday, February 18.

Technical Association of the Pulp and Paper Industry. Convention, Pennsylvania Hotel, February 17-19. Luncheon, Thursday, February 19.

Salesmen's Association of the Paper Industry. Annual Meeting, Pennsylvania Hotel, Tuesday, February 17. Luncheon, Tuesday, February 17.

New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Hotel Commodore, Tuesday, February 17.

NEWS PRINT MERGER RUMORS

Interesting rumors continue to come from Montreal regarding the proposed consolidation of the major news print companies with a view of drastic reorganization to the end that cost of production may be cut to the bone. As the weeks go on and there is no announcement despite the repeated conferences that are being held. There is some disappointment, but it may be said that the plan is still very much alive.

It is true that fresh difficulties crop up at each conference, but the feeling is that consolidation ultimately is inevitable, and that progress is being achieved in the right direction. Perhaps this may not come until the financial statement of the various companies covering the past year's operations are made public. These, it is thought, may help along the movement, for none of them can be expected to be very favorable, and as a whole they may form an irresistible argument for less divided control.

Lacking any decision regarding a major consolidation, rumor is busy with lesser mergers. Thus this week there is the rumor that Abitibi Power and Paper may take over the St. Lawrence Corporation, which in its turn controls Brompton Pulp and Paper Company, St. Lawrence Paper Mills Company and Lake St. John Power and Paper Company. Whether there is anything in this rumor or not remains to be seen; its significance lies in the undoubted fact that every possible prospect of closer alignment in the news print industry is being explored, with the added stimulus given by a very active interest in the whole subject by the leading banks.

In this latter connection, the following remarks by Sir Herbert Holt, president of the Royal Bank of Canada, at the annual meeting of the shareholders during the week are of interest. He said:

"The prosperity of the Canadian news print industry is of vital importance to our national economy, for news print is one of Canada's major industries, employing, in 1929, 33,584 persons (exclusive of those who were employed in the woods), receiving wages of over $50,000,000. News print is one of Canada's principal exports, bringing into the country about $150,000,000 annually and contributing largely to our balance of trade with other nations.

"The present situation in the industry is most unsatisfactory, largely caused by unwise over-expansion and the reduced demand brought about by world-wide depression. I think it would be advisable for the Provincial Governments to prohibit further installations until the demand catches up with the present supply. They should also insist on all Canadian companies operating at the same percentage of capacity. This would do away with futile competition and useless price cutting and leave the industry in a substantially stronger position."

AUSTRIAN PAPER MILLS HARD HIT

Austrian paper manufacture once most flourishing among the country's industries, is now going through a period of stress and strain, according to advices received in the Department of Commerce from Assistant Commercial Attache De. Forest Spencer, Vienna.

The progress made in other countries, especially the Scandinavian in the establishment of new paper mills and the installation of new machinery in the older mills has made it much more difficult for Austria to compete even in some of its long established markets. In recent months the stress of competition has been even more severe in view of the fact that domestic consumption has likewise been curtailed, reflecting the economic depression that now besets most of Central Europe, and some mills have been obliged to suspend operations for the time being, while others are operating on a part time basis.

The present operation of the Austrian paper mills is estimated at about 50 per cent normal capacity. Austrian paper sales are rapidly losing ground in Hungary, Poland, and Yugoslavia, as indicated by the steady decline from month to month in paper exports to these markets, and strenuous efforts are being made to offset the losses sustained in this quarter by exporting to the Levant.

The Austrian paper industry is loudly voicing its discontent that Austria's delegates in negotiating new commercial treaties have been unable to keep a firm hold on the markets in which Austria was formerly a most successful competitor.

The present unfavorable situation is also aggravated by the fact that despite the price convention existing among Austrian manufacturers, they have in individual cases been prepared to make special terms and pay the penalty for underbidding rather than lose the customer. Nor has the ability of Austrian paper mills to successfully meet the terms of their competitors been increased by the recent flooding of markets with Russian pulpwood.

In July production of paper and wood pulp was approximately 10 per cent below the corresponding month in 1929. Paper requirements further are reported to have dwindled to such an extent by the end of September that the demand at that time could be taken care of from stocks on hand.

According to figures compiled by the Austrian Association of Paper and Wood Pulp Manufacturers production of pulp and paper, with the exception of cardboard, during the first half of the current year was from 1 to 7 per cent below the corresponding six months in 1929, which would indicate that since June there has been a consistent downward trend in production.

Waste Paper as Raw Material

The National Association of Waste Material Dealers, 1109 Times Building, New York has sent the following letter to paper manufacturers:—

"Consumers of waste paper as represented by the Board Mills and others are said to be solicitous as to the future of the Waste Paper Industry in that it represents the source of much of the raw materials going into their manufactured product. We understand that many of these consumers take the position that it is unwise and uneconomical for waste paper collectors to deliberately destroy large tonnages of waste paper by burning it up or by accomplishing the same result by refusing to make collections for extended periods. Such manufacturers take the position that even when business conditions get back to normal there can be no return to the price levels in force for waste paper before the present business depression set in owing to the fact that kraft pulp in competition with waste paper will compel a very much lower level of prices than has existed for the past few years. These manufacturers take the position that the solution to the problem is in the hands of the waste paper dealers; that the public generally, and the producers of waste paper in particular should be brought to understand that the regular collection of the cheaper grades of waste paper from day to day is a service that should be paid for by the producer instead of expecting the dealer to pay for the waste removed.

"The following suggestions are respectfully offered for the serious consideration of the consumers of waste paper:

"1—Do you believe that the waste paper packer has a legitimate place in the paper industry?

"2—Assuming that we are correct in the position taken above that the consumer holds that the difficulty lies in the fact that the collector is paying for something which he should be paid to take away, we ask the consumer how the waste paper dealer is going to convince the producer of waste paper that he should not be paid for the waste paper collected when the board manufacturer continues to take and pay substantial prices for the waste produced by some of his board consumers, in many cases considerably higher than he will pay the waste paper packer for similar stock or even for superior stock.

"3—Is it good business or good ethics for the paper manufacturer consuming waste paper to purchase waste paper from peddlers who cart such material direct to the mills, and in other ways compete directly with the waste paper packer, or should their purchases be confined to the legitimate packer or dealer who maintains a packing plant, sales organization, etc., and whose services are depended upon when any real sizable tonnage is needed? Some consumers of waste paper, we understand, have contended that what was needed was more stability in waste paper prices. Such stability could be better maintained if consumers would confine their purchases to large and responsible concerns of their own choice.

"4—To what extent is cutthroat competition as now carried on among the board manufacturers responsible for the conditions which are making it impossible for the waste paper dealer and packer to receive a legitimate return for his efforts in supplying the chief raw material for these manufacturers?

"5—Why is it that there has been such unwillingness on the part of board manufacturers to sit down with the representatives of the waste paper industry and consider problems, the solution of which would be of advantage to both?

"We appeal to all progressive consumers of waste paper to recognize the fact that conditions affecting the collection and distribution of their raw material is a subject in which they should and must be interested. There may be consumers who realize fully the seriousness of the situation and who are working closely with their suppliers, and they, of course, will realize that this letter is simply for their information. The Waste Paper Industry has done everything in its power to reduce buying prices to a reasonable figure, having in mind the interests of the consumer as well as the packer, and it has approached producers of waste paper with a view of acquainting them with the seriousness of the situation.

"We shall be glad to welcome suggestions from any paper manufacturer desiring to assist in the solution of the present unsatisfactory condition of affairs in the Waste Paper Industry. Replies or comments on the suggestions in this letter received from consumers will be summarized and, without disclosing the names of the writers, will be furnished to manufacturers consuming waste paper who indicate to us that such information would be appreciated."

J. P. Hayes Leaves A. P. W. Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 12, 1931—Further reorganization of the executive staff of the A.P.W. Paper Company was effected this week with the retirement of John P. Hayes, manager of the credit department. He had been in the employ of the firm for the past twenty years and announcement of his resignation came as a surprise to the employees. His connection with the company dated back to 1910 following his graduation from high school when he secured the position as office boy. He was promoted rapidly and on leaving this week he was rated as the oldest employee in the credit department.

Among the other officials severing connections with the firm since the Babson interests acquired control were William A. Wheeler, former president, Vernon D. Biernan, treasurer, and Thomas B. Edgar, and Archibald Wheeler. All of these men are now identified with other enterprises in the city while Thomas B. Wheeler has organized a paper concern with responsible backing which is competing with the A. P. W. Company. The plans of Mr. Hayes for the future are still undecided but it is understood that his duties as Assemblyman will keep him busy for some time.

Determination of Alpha Cellulose Content

The Bureau of Standards at Washington, D. C. has obtained additional evidence that thorough disintegration of paper is necessary in determining its content of alpha cellulose. Papers of varying degrees of hardness were prepared by hand from different kinds of paper-making fibers. The variation in hardness was obtained by varying the degree of hydration in the beating treatment given the fibers. In this way a series of papers having different degrees of hardness were prepared from each kind of fiber. The papers were then tested for alpha cellulose content in the form of cut pieces and in a thoroughly defibered form secured by grinding the paper. In all cases it was found that the harder the paper, the greater was the difference in alpha-cellulose values as measured on the two forms of test specimens.

Results of a study of the effect of the temperature at which the titration is made in determination of copper number, show that the effect within the temperature range 10-40 deg. C. is negligible.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Paper Machine Wire Cloth Developments*

By W. E. Buchanan[1]

The fourdrinier wire industry began in the United States in 1848. Previous to this time, wires were imported from England. When the industry was established, paper machines were few, and the wet ends required narrow and very short wires. Mr. Weissenborn, president of our Company, tells that over fifty years ago when he started in the fourdrinier wire business, they would hear the train whistle for the station, would throw a boxed wire over their shoulder, and carry it to the station and put it on the train. This gives a good idea of the size of paper machines in those days.

Machine speeds were very slow. Rag, hemp, and straw were the common materials used for pulp, and the requirements for fourdrinier wires were not exacting. These conditions resulted in long wire life. In those days mills would complain if a wire should only run four months, because it was believed that the minimum life should be six months.

The introduction of wood pulp worked a revolution in the paper industry. When paper could be produced cheaply, the demand increased decidedly and during the past decade the width and speed of paper machines have increased by leaps and bounds.

This development in the paper industry is mentioned because of its relation to the demands put upon fourdrinier wires. To make it possible for paper to be made at high speeds and on wide machines, it has been necessary for the wire manufacturers to constantly improve and change fourdrinier wire to conform to these new conditions in the paper industry.

When changes in speed have been made in different mills, operators are familiar with the wire troubles that have been experienced until the problem could be worked out through the cooperation of the paper and wire manufacturers. In other words, there has of necessity been a slight lag in the development of fourdrinier wires as compared with the accomplishments of the paper machines. This is because speeds, wider widths, changes in design of wet ends, and new pulps, have resulted in problems which could not be foreseen until they arose, and new ideas in equipment, raw material, and seams had to be worked out in order to make a wire which would meet these conditions.

The primary purpose of a wire is to play its part in producing a quality sheet of paper. The other consideration is that the wire shall give as long service as possible, with increased costs occasioned through machine shut-downs and loss of stock and filler reduced to a minimum.

Fourdrinier Wire Meshes

There is a variation from mill to mill in the mesh which is used for similar grades of paper. A general outline of meshes used for the various grades is as follows:

News Print	55 mesh	to	65 mesh
Kraft	55 mesh	to	70 mesh
Tissue	75 mesh	to	100 mesh
Book	65 mesh	to	80 mesh
Sulphite Bond	65 mesh	to	75 mesh
Writing	65 mesh	to	75 mesh
Glassine	65 mesh	to	75 mesh

There is a definite tendency toward the finer meshes for all grades of paper. A finer wire may result in a better sheet formation, decrease in the wire mark, less two-sidedness to the sheet, fewer pinholes, and less loss of stock.

We are often asked the question as to the relative drainage of the various meshes We do not know of any equipment which will give a true picture of this. The proportion of air space to metal is practically the same for all meshes. The difference between the meshes, therefore, is that a finer mesh cloth has more holes per square inch than a coarser mesh, but the holes are smaller. For example, an 80 mesh wire has twice as many holes as a 60 mesh wire and the holes are one half the size in the 80 mesh wire. Due to capillary attraction, it takes a liquid longer to go through a small hole than a larger one, and this would account for the slight slowing up of drainage in the finer meshes.

Experience indicates a difference in the drainage of a new and an old wire. As the knuckles of the cloth become worn, the water removal qualities of the wire are not as good. More power is needed to drive an old wire than a new one, because there is more friction as a result of the greater area of the worn knuckles as compared with the comparatively sharp knuckles of new cloth.

It has not been our experience that going to a finer mesh necessarily means shorter wire life. Several mills have gone from 70 to 75 mesh, for example, without any noticeable shortening in the life of the wire.

The condition of the pulp is of importance in determining the correct mesh to be used. In two mills making the same grade of paper, similar results are sometimes obtained by using one mesh in one mill and a different mesh in another. The question of mesh can only be determined by a study of local conditions.

Some Causes of Wire Replacement

When the knuckles on the under side of a wire wear down to a point where insufficient metal remains to stand the strain of the machine, the wire cracks and is said to be worn out. It is exceptional when the knuckles wear equally to the breaking point all the way across the wire. Generally weakness develops in some area as the result of some unevenness in the surface of the wire which might or might not have been prevented by greater care in handling or in use.

The less the strain on the wire through vacuum, bends, and the driving of rolls on the machine, the farther down the knuckles will wear before cracking.

* Presented at the third meeting of the Lake States Section of TAPPI, Menasha, Wis., December 9, 1930.

[1] Appleton Wire Works, Appleton, Wis.

Wear is caused by grit, clay, slippage of rolls, and friction. The metal of the wire is ground away on the suction box side. Clean water has an advantageous effect upon wire life. The maximum possible reduction in thickness of cloth as a result of wear on the suction box side of the cloth is about 28 per cent.

As wires under favorable operating conditions give out because of natural wear, the material used in weaving fourdrinier wires is of the greatest importance. We shall later speak of what has been done to improve this phase of our product.

However, because so many wires are taken off machines before they are worn out, it would be well to consider the causes of failure which most frequently come to our attention.

Seams

The seam is the weakest part of the fourdrinier wire. As wires cannot be woven endless, it is necessary to join the ends in order to make an endless belt of the cloth. During the past twenty years, the art of making seams has undergone a revolution. Prior to this period seams were made by edging each end of the cloth back three and four weft wires, and then closing the two ends of the cloth together. Because of the slow speeds the wires ran, this seam was satisfactory.

At about this time this seam started to cause trouble through filling up and cutting off the sheet because the seam was too wide and drainage was impaired, and the same type of seam was made by edging two and three weft wires back in place of three and four. This seam was also satisfactory for a short time.

New grades of paper such as glassine were being developed and there was an increasing demand for lighter weight sheets. Machine speeds were increased so a narrower seam was necessary. The result was the development of the seam sewed two weft strands back on each side. This is a single operation seam as compared with the other type of seams which required three separate operations across the cloth.

This two back seam is satisfactory now for many purposes, but for light weight tissues and on high speed machines it may cause trouble through filling up and cutting off the sheet. When a seam fills up, it is necessary to sour it out or brush it, and the seam is subjected to possible damage. When a seam marks, the supposition is that it is too close or too high. The fourdrinier wire, then, is either tightened down which weakens it, or the seam is rolled or pounded down, and because there are not facilities for properly doing this work when the wire is on the machine, the seam is generally ruptured and gives out prematurely.

The two back seam is not as open as the rest of the wire cloth and therefore hasn't as much drainage as the body of the wire. This subjects it to more wear than the body of the wire, often causing premature failure at the seam. Furthermore, we have had trouble in certain mills with the knuckles of the cloth giving away directly in back of the seam. This is because the seam is stiff and cannot hinge or bend.

To meet these difficulties, we developed a few years ago a method for making our No. 1, or one back seam. The warp wires are brazed to the weft wires on either end of the cloth, and the sewing wire is passed around these last weft wires.

This type of seam has overcome the serious troubles experienced with the other seams which we have used. It possesses the same drainage as the rest of the wire cloth, and so cannot fill up and mark the sheet at any speed. The cloth hinges at the seam, thereby overcoming the common trouble of the two back seam of the knuckles cracking out in back of the seam.

Because this seam is so fine, one naturally asks whether or not it will hold together or if the brazing will give away. We have never had this happen. A test of the tensile strength will show the great strength of this seam. We have used it in all meshes up to and including 90 mesh.

Out of about 1500 wires which we have shipped containing this narrow No. 1 brazed seam, we have only had two complaints of premature seam failures, and the life was not seriously shortened in these cases. We have never heard of this seam filling up, marking, or cutting off the sheet. We therefore feel, from our experience, that we have developed a seam which overcomes the shortcomings of seams of other constructions.

Suction Box Scoring

No one thing is more aggravating to a machine operator than a wire which hangs or freezes to the boxes. This is caused by the consecutive knuckles of the wire passing over the boxes in the same plane, and the result will be the forming by the knuckles of grooves in the suction box covers. This condition is more prevalent at high speed, and can be overcome be preventing the knuckles from tracking.

When a wire scores the suction boxes, the wood between the grooves in the boxes will in turn wear away the sewing wire of the seam. Our experience has been that a wire which is scored will give out at the seam after having given only about half service.

Oscillating suction boxes are very advantageous in the less serious cases. We believe the only effective method for high speed machines is to make the wire so that it cannot track, and this condition has been met in different ways by different manufacturers. Our oscillating wire successfully meets this condition.

Edge Cracking

The Technical Association of the Pulp and Paper Industry has recently made a very complete and excellent study of edge cracking. There is no doubt that there are many wires which are removed prematurely because of this trouble before they are worn out. On most machines it is impossible to trim wires because of the necessity of running a wide deckle, and when the edges crack, the wires must be removed.

We believe that most edge cracks are caused by local machine conditions but we shall speak of possible reasons for edges cracking which may be attributed to the wire.

Brass is more suitable for many machines than bronze. On some machines bronze wires give very short service generally as a result of the edges cracking.

If the wire is not properly annealed, it may crack on the edges. An anneal which is suitable for one machine may cause edge cracks on another.

The selvage edge may have a bearing on the question. Some mills have better results with silk in the edges, some linen, some cable twisted wire, and in others selvage of two wires woven in close together. On some machines a selvage of stainless steel or monel may answer the requirements and some superintendents have a preference for no selvage whatever. Because of the many varying opinions it cannot be said that any particular selvage is proper, and it is probable that various conditions require different types of selvage edges.

A slack edge will often cause cracks to develop. The adge may whip and cause the metal to crystalize or the cold working of the edge on a machine with the top couch might be serious.

Certain weaves may cause edge trouble. For example, a wire in which the number of weft wires is more than the acknowledged standard for count, and the use of a small diameter wire for the weft wires will make a cloth with sharper knuckles, and one more susceptible to cracking troubles.

Sometimes wires run into wrinkles on the machine as a result of a slack place in the wire, because of the operation of the wire, or the condition of the machine.

There may be imperfections which may crack out prematurely. Any dent, kink, or bulge, will result in more wear at this particular spot and the wire will seldom give its potential service. These are questions of good management, and the aim of all mills is to reduce these accidents to a minimum.

Recent Developments in the Fourdrinier Wire Industry

The more important developments which have taken place in the fourdrinier wire industry have been centered along the line of producing an article which will give longer life. They may be

divided into two classes; first, a wire more resistant to wear, and two, variations in weave and in types of cloth.

An attempt has been made to substitute for brass or bronze a material which will resist abrasion to a greater extent.

Monel and stainless steel, although being considerably harder than brass or phosphor bronze and apparently possessing the quality of pliability, have not been successful because the metal gets harder in use on the paper machine and cracks.

Some experimenting is now being carried on with chromium plating. If the plating would not injure the wire, the wire cloth should wear longer because of the extreme hardness of the chromium surface. We have no definite report on this method as yet.

There is a limiting factor to the use of any material which will substantially increase the cost of the fourdrinier wire. Probably the majority of wires are removed from machines not because they are worn out but because they are injured in some manner, or have been on the machine so long that they become filled up, dirty, or worn to the point where they are not satisfactory for producing a good sheet of paper. A wire made of a more durable material would be just as subject to these factors as a wire of brass or bronze, so the greater original cost might not be economy even though the wire contained more potential wear.

For many years wires have been made of brass with a bronze wire substituted every few warp wires. The theory here has been that the harder bronze would relieve the brass from wear, and yet the wire would be more pliable than a bronze wire. The same idea can be carried out substituting any harder metal at regular intervals.

We believe that recent improvements in the drawing and annealing processes have been a big factor in increasing wire life. This has been accomplished through studying the effect of various methods of drawing and annealing upon the raw material and by following through the results obtained from the use of different temper wires on the paper machine. The temper of wire can be determined within a certain limit through studying the grain sizes of the wire by means of photomicrographs. Comparative tests of the yield point, tensile strength, and elongation of a single strand of wire also gives us a good basis of comparison.

During the past few years better alloys of more uniform quality have been made.

Control in mixing the alloys, uniform wire temper as a result of electric annealing with pyrometer control and more knowledge of what is required by various types of paper machines has resulted in longer and more uniform runs on fourdrinier wires.

There is no definite answer to the question of the suitability of brass of phosphor bronze. The condition of the paper machine, the pulp, and water conditions are factors. In general we believe bronze should be used for news print, kraft, and tissue, and that brass will give a lower cost per ton for book and writing.

The rolled wire is a new development which has not been in use long enough to determine its merits. The claims made for it are that it will reduce the wire marks in the sheet, will not hang to the suction boxes because of the flattened knuckles, and will give longer life because the warp wires which receive the wear are hardened through rolling.

There have been many improvements in loom construction and operation during the past few years. Imperfections in weave have been materially reduced. Wires are flatter and make a better forming surface for the sheet of paper. Wires are now being made which are much heavier in weight, the advantages being that they are less subject to damage in being put on the machine, are stronger and also have more metal to wear.

Maine Electric Joins TAPPI

A company that has long been a leader in the field of materials handling is the Maine Electric Company of Portland, Maine. Although relatively a newcomer to the pulp and paper industry it has recently attracted much attention in the industry as a result of its interesting drag scraper installation in the pulpwood yards of the S. D. Warren Company at Cumberland Mills, Maine, and the Maine Seaboard Paper Company at Bucksport, Maine.

Work on the development of this scraper began in 1926. The same principles were used as were common to the storing and reclaiming coal. In January 1929 a successful and proven pulpwood rake was turned over to the S. D. Warren Company at Cumberland Mills. Another rake was made during the past year and installed at Bucksport to handle wood for the pulp mills of the newsprint mills recently built there.

The Maine Electric Company is now specializing in handling bulk materials, principally coal, sulphur, ashes and pulpwood. Another line added since 1920 is gate hoists for hydroelectric developments and a considerable number have been designed and built for such companies as the International Power and Paper Company, Phoenix Utility Company, Electric Bond and Share Company and the Great Falls Power Company.

The company was first organized in 1894 for the manufacture of motors and generators. In 1903 the company was reorganized and incorporated and since that time has been engaged in the design and manufacture of a general line of drum hoists, bulk material and lumber handling equipment.

During the past thirty-six years, the company has built and installed equipment in practically every state in the Union, in Canada and in the Panama Canal Zone. Credit is given the Maine Electric Company for making the first successful applications of electric power and control to contractors' drum hoists and coal unloading towers.

Among the outstanding complete coal handling plants installed by this company are the Kips Bay Station of the New York Steam Corporation, the Waterside and East River Stations of New York Edison, Hell Gate Station of the United Electric Light and Illuminating Company, the Baltimore Station of the American Sugar Refining Company, the Valmont Station of Henry L. Doherty Company, the Essex Station of the Public Service Company of New Jersey and the Harbor Point Station of the Utica Gas and Electric Company.

It has erected sulphur handling plants for the Grasselli Chemical Company at Grasselli, N. J. and the Merrimac Chemical Company at Everett, Mass. At Staten Island, N. Y. it installed a gypsum rock unloading station for the United States Gypsum Company. For the Panama Railroad it built a battery of eight cargo cranes at Balboa, Canal Zone and at Botwood, Newfoundland, it installed wharf cranes for loading zinc concentrates for the American Smelting and Refining Company.

To enable the Maine Electric Company to be of the utmost engineering service to the pulp and paper industry it has recently become a member of the industry's leading manufacturing and engineering service organization the Technical Association of the Pulp and Paper Industry.

University of Maine Men Attention

Since many graduates of the University of Maine are employed in the pulp and paper industry and usually attend the annual meeting of the Technical Association of the Pulp and Paper Industry in New York, there has been a growing desire on the part of many to have an annual get together during "Paper Week."

All Maine men who would like to have a Maine Alumni pulp and paper luncheon or other kind of meeting held in New York on February 17, 18 or 19, should write at once to Merle B. Shaw, 3715 Jenifer street, N. W. Washington, D. C.

Electrical Developments in the Paper Industry

Owing to an inadvertence, the captions for some of the cuts in the article entitled "Electrical Developments in the Paper Industry for the Year 1930," by R. R. Baker, on page 43 of the issue of the PAPER TRADE JOURNAL of January 1, were misplaced. The photograph identified as Fig. 3 was given the title which belonged to Fig. 4, which in turn was given the title belonging to Fig. 5. Fig. 5 had the caption which should have been given to Fig. 3.

Waste Liquors and Gases of the Paper Industry

A Survey of Recent Domestic and Foreign Patent Literature on the Utilization of Waste Liquors and Waste Gases of the Pulp Industry, 1925-1930.

Clarence J. West, Chairman, Committee on Abstracts and Bibliography, T.A.P.P.I.

In 1924, Dr. A. Schrohe published in *Der Papier-Fabrikant* a survey of the patents on waste liquors and gases. This was translated by C. J. West and, with additions, appeared in PAPER TRADE JOURNAL, 81, nos. 14-26 (Oct.-Dec., 1924) and in *Technical Association Papers* 9:146-181 (1926). In *Papier-Fabrikant* 26:241-247 (1928) Schrohe published a discussion of the work during the period 1925-1927.

The following compilation includes those patents which have appeared in the *Technical Section* of the PAPER TRADE JOURNAL, *Chemical Abstracts* and *Papier-Fabrikant* during the period 1925 to date. In the first compilation the patents were arranged according to the year in which they were issued; the present compilation has been arranged first by the country in which the patent was issued and under each heading, according to number. This is followed by an author and subject index.

The first compilation contained 534 patents. The present compilation contains patents 535-788 and 97 inserts or a total of 885 patents.

Additions or corrections to this list will be appreciated by the compiler.

United States Patents

535. U. S. 1,524,435. JAN. 27, 1925. A. F. HOFFMAN AND W. M. PARKIN. PICKLING BATH.

Articles of iron or steel are treated with "acid-concentrated" sulphite liquor which may be prepared by filtering, concentrating to 30-32° Bé *in vacuo* and subsequently mixing with water and sulphuric acid or hydrochloric acid.

535.1. U. S. 1,537,190. MAY 12, 1925. E. PIRON. FUEL BRIQUET.

Briquets formed of pulverized coke with a binder of sulphite liquor are enclosed in a layer of carbonized tar.

536. U. S. 1,538,269. May 19, 1925. L. J. B. A. COLAS. BLACK LIQUOR.

Calcium acetate, oxalic acid or other flocculating agent is added to black liquor to coagulate the fine particles which it contains. These particles and larger particles are separated and the residual liquid is treated with lime or other base to separate the remaining fine particles and a portion of the substances in solution.

537. U. S. 1,539,966. JUNE 2, 1925. N. STATHAM. ACETONE FROM WOOD PULP WASTE LIQUOR.

Waste liquor from pulp digesters is concentrated and combined with additional sodium hydroxide and then with large quantities of caustic lime to form a substantially solid high-lime causticized organic acetate material. This material is subjected to dry distillation and calcination. Sodium hydroxide liquor is leached from the calcined residue and used for addition to liquor from the digesters.

538. U. S. 1,549,189. AUG. 11, 1925. V. DREWSEN. WASTE MAGNESIUM MONOSULPHITE LIQUORS.

Waste magnesium sulphite liquor from digestion of vegetable materials is boiled with powdered slacked dolomitic lime to precipitate magnesium hydroxide and the latter is utilized to regenerate magnesium sulphite for further use in digestion, by reaction with sulphur dioxide.

539. U. S. 1,551,882. SEPT. 1, 1925. GERMAN 487,922. AUG. 15, 1925. SWEDISH 67,408. AUG. 8, 1925. NORWEGIAN 43,117. AUG. 13, 1925. GUY C. HOWARD. TREATMENT OF SULPHITE WASTE LIQUOR.

Waste sulphite liquor is mechanically agitated and aerated and simultaneously treated with a reagent such as calcium hydroxide which precipitates a mixture of organic and inorganic substances. The resulting product, without filtration, is further agitated and aerated to remove precipitated organic matter substantially free from inorganic matter, as a froth. The precipitated inorganic matter is afterwards separated.

540. U. S. 1,552,973. SEPT. 8, 1925. S. F. WALTON. CARBON PIGMENT.

The black ash residue of the soda process of wood pulp manufacture is treated, *e.g.*, by sedimentation and flotation in water, to remove the lighter and heavier portions and leave a carbonaceous residue which is then ground to form a pigment.

541. U. S. 1,553,220. SEPT. 8, 1925. C. F. CROSS. LIGNONE DERIVATIVES.

Soluble lignone derivatives obtained by treatment of lignocellulosic materials with sulphur dioxide are treated with an oxidizing agent, such as chromic acid, to produce substances which may be used for sizing or filling wood.

542. U. S. 1,554,581. SEPT. 22, 1925. H. KOCH. WASTE GASES.

Waste gases, such as are evolved from cookers in which cellulosic material is digested with sulphite solution, are subjected to electrical precipitation at a temperature sufficiently high to prevent condensation of water, in order to separate organic substances such as aromatic compounds.

543. U. S. 1,555,782. SEPT. 29, 1925. T. BLACKADDER AND H. C. REED. TANNING COMPOSITION.

A waste sulphite liquor preparation is made with an acidity, expressed in terms of acetic acid, equal to about 15 per cent of the dissolved solids and with substantially no ash-forming constituents other than calcium sulphate. This liquor may be used in tanning or plumping.

544. U. S. 1,556,488. OCT. 6, 1925. L. CALDWELL. INSULATING CEMENT.

A cement or mortar adapted for use in heat insulation consists principally of powdered diatomaceous earth and an organic adhesive, such as glue, casein or waste sulphite pitch, together with not more than 7 per cent of sodium chloride, borax, potassium sulphate, or other salt which serves as a distending agent for the adhesive.

545. U. S. 1,558,022. OCT. 20, 1925. A. W. LISSAUER. PREHEATING AND SPRAY DESICCATION OF DISTILLERS' SLOP, WASTE SULPHITE LIQUOR OR OTHER LIQUIDS BY COMBUSTION GASES.

546. U. S. 1,558,599. OCT. 27, 1925. G. J. ESSELEN, JR. FIRE EXTINGUISHING FOAM.

The residue of neutralized and evaporated sulphite waste liquor is used as a foam-maintaining and evaporation-preventing material.

547. U. S. 1,560,420. NOV. 3, 1925. F. E. GREENWOOD. ROSIN FROM BLACK LIQUOR.

Resinous components of black liquor are treated with a solvent or emulsifying liquid, *e.g.*, gasoline or naphtha, and an acid such as sulphuric acid is added which will liberate resinous substances so that they may be taken up by the solvents. A second solvent, immiscible with the first solvent, *e.g.*, ethyl alcohol or methyl alcohol, is used for selective separation of the rosin from the solution in which it is first obtained.

548. U. S. 1,560,649. NOV. 10, 1925. J. BEVERIDGE. RECOVERING SODIUM ACID SULPHITE.

A portion of waste sulphite liquor, after draining from the pulp, is neutralized, *e.g.*, with sodium hydroxide or carbonate, evaporated, mixed with unneutralized liquor, carbonized and the

carbonized product is leached with water to form a solution containing sodium sulphite, etc.

549. U. S. 1,560,900. Nov. 10, 1925. V. Drewsen. Waste sulphite liquor.

The waste liquor is concentrated until it contains only about 50 per cent water and mixed with niter cake and with 10-30 per cent of hydrated lime to fix the organically combined sulphur and minimize its elimination. The mixture is then incinerated and melted to produce sodium carbonate and calcium sulphide, sodium salts are leached out and the residue is treated to form sulphur dioxide which is combined with the sodium salts to form sodium mono-sulphite for preparing pulp cooking liquor.

550. U. S. 1,561,636. Nov. 17, 1925. G. Bojner. Evaporation.

Combustion gases are passed through a rotating heater immersed in the liquid to be evaporated and the heater is rotated with sufficient speed substantially to avoid incrustation.

551. U. S. 1,563,010. Nov. 24, 1925. J. Breedis. Tanning composition.

Marrikino gum or other natural tanning material is heated with sulphite cellulose liquor in the presence of free alkali, *e.g.*, aqueous solution, until chemical reaction occurs and the product is then acidified to produce a substance which has better tanning properties than the constituents.

552. U. S. 1,564,142. Dec. 1, 1925. German 414,772. Nov. 7, 1923. Swedish 62,554. Oct. 4, 1924. C. G. Schwalbe. Utilization of waste sulphite liquors.

Normal or concentrated waste sulphite liquor is mixed with such salts as magnesium chloride, calcium chloride, sodium chloride, etc., and heated under pressure to 150 to 200° C. Waste potash liquors or concentrated sea water may also be employed. To the mixture are added fibrous materials, such as wood refuse, sawdust, etc. In addition, mineral acids (sulphuric acid, hydrochloric acid etc.) may be used.

553. U. S. 1,567,395. Dec. 29, 1925. A. Schmidt. Chlorinating sulphite liquor.

Sulphite liquor is first treated with chlorine gas and the resulting material is then further treated with nascent chlorine formed, *e.g.*, by use of chlorates and hydrochloric acid. The product thus obtained is suitable for use in tanning or resin substitutes.

554. U. S. 1,569,578. Jan. 12, 1926. O. Roehm. Tanning composition.

Sulphite cellulose liquor is mixed with ferric chloride or other iron salt and with an alkali metal silicate to form a composition which produces leather of good weight and color.

555. U. S. 1,571,873. Feb. 2, 1926. T. Blackadder. Tanning.

In preparing a tanning material from waste sulphite liquor, digester liquor is treated with slightly more lime than required to neutralize it, the precipitate formed is separated, the liquor concentrated and sulphuric acid added to precipitate the lime.

556. U. S. 1,573,703. Feb. 16, 1926. F. H. Griffin. Dialytic apparatus for recovery of caustic hydroxides from black liquor, mercerizing solutions or other waste solutions.

557. U. S. 1,575,473. Mar. 2, 1926. Canadian 283,128. Sept. 4, 1928. Alfred H. White. Regenerating spent sulphate liquors.

The spent liquors obtained by the sulphate process for the manufacture of pulp are regenerated by concentration until the effective heating value of the liquor is more than sufficient to calcine a weight of calcium carbonate equal to the weight of the inorganic salts in the liquor, burning the concentrated liquor in air and in the presence of calcium carbonate, whereby the calcium carbonate is converted into calcium oxide, intimately mixing the calcium oxide with the non-combustible residue of the liquor to form a solid product comprising largely calcium oxide, alkali carbonates and sulphates, mixing said solid products while still above a red heat with carbonaceous matter sufficient to reduce the sulphates to sulphides, largely effecting such reduction at a temperature above 1100° F., and leaching the reduced mass with water to dissolve alkali salts.

557.1 U. S. 1,576,248. Mar. 9, 1926. Jacob S. Robeson. Briquets.

A binder for making briquets of fuels, ores, etc., comprises ingredients of waste sulphite liquor or the like, liquid residuum such as wood tar obtained in the destructive distillation of woody tissue and molasses or similar thick residuum of sugar-bearing plant juices.

558. U. S. 1,576,643. March 16, 1926. L. B. Decker. Apparatus for recovery of gas and heat from wood pulp digester blow-off exhaust vapors.

559. U. S. 1,576,970. Mar. 16, 1926. C. Hangleiter and A. Schneider. Regenerating sulphurous acid.

Hot gas and vapor from a boiler are introduced into streaming cold fresh lye at a point in close proximity to the boiler.

560. U. S. 1,580,269. Apr. 13, 1926. Canadian 283,820. Oct. 2, 1928. A. H. White. Regenerating black liquor.

Black liquor from a sulphite pulp process is subjected to destructive distillation and the residual salts are heated with lime and carbonaceous material to reduce the sodium sulphate present. A temperature is employed (usually about 600-700° C.) sufficient to effect reduction of the sulphate in the presence of lime but below the temperature at which calcium carbonate dissociates and the product is lixiviated to recover sodium hydroxide.

561-562. U. S. 1,582,066-7 Apr. 27, 1926. H. K. Moore. Multiple-effect evaporation of waste sulphite cellulose liquor.

The liquor flows from an intermediate effect in sequence through a group of progressively hotter effects and thence in sequence through a group of effects which are progressively colder. Apparatus and heat-exchange features are specified.

563. U. S. 1,582,317. Apr. 27, 1926. A. M. Thomsen. Treating waste sulphite liquor (fuel).

Waste sulphite liquor, concentrated to a sirupy consistency, is mixed with charcoal or other suitable porous readily combustible material heated to a temperature above that of the liquor and the materials are then subjected to reduced pressure to facilitate impregnation of the pores of the added material by the liquor. The product is adapted for use as a fuel.

564. U. S. 1,585,792. May 25, 1926. E. Schlumberger. Disinfectant.

Waste sulphite liquor is treated with chlorine and the precipitate formed is separated. It is a disinfectant and may be improved by treatment with hydrochloric acid and potassium chlorate.

565. U. S. 1,587,345. June 1, 1926. G. Mosebach. Apparatus for recovery of black liquor.

An apparatus is described suitable for recovering black liquor from the digestion of straw according to U. S. 1,587,668. It provides essentially for the removal in part of the black liquor from the stock in a screw press, opening up the pressed stock, mixing it with hot water and putting through a second screw press, the dilute black liquor removed in the second press being used for the preparation of fresh liquor.

566. U. S. 1,587,679. June 8, 1926. G. A. Richter and S. L. Swasey. Recovering calcium carbonate.

The solution of smelted sodium compounds recovered from the black liquor is treated with lime, insufficient to causticize the entire solution, the precipitate is removed, the remaining solution is further causticized with lime and the precipitate is recovered.

567. U. S. 1,592,062. July 13, 1926. W. E. B. Baker. Tanning extracts.

A mist of sulphite waste liquor is sprayed into air to remove gaseous constituents and effect oxidation, the sprayed liquor is treated with an alkaline earth metal oxide compound sufficient to decompose the reversible sulphurous acid present in combination with the substances dissolved from wood to increase the elimination of sulphur as monosulphite and the basic liquor is filtered to remove insoluble substances. The filtrate, after concentration, is treated with a small quantity of sulphuric acid to convert organic salts into organic acids which are tanning agents and to convert

alkaline earth metal compounds into insoluble form and the insoluble substances are removed by filtration.

568. U. S. 1,592,063. JULY 13, 1926. W. E. B. BAKER. TANNING EXTRACTS.

The waste sulphite cellulose liquors containing magnesium compounds are treated with a neutralizing agent such as calcium hydroxide, which forms insoluble sulphates and sulphites and the liquors are concentrated, the concentrated extract is treated with a concentrated solution of magnesium sulphate to effect a double decomposition and the basic constituents such as calcium, barium or strontium are separated in the form of an insoluble sulphate, which is removed from the finished concentrated extract.

569. U. S. 1,593,487. JULY 20, 1926. A. R. DE VAINS. SOLUBILIZING CHLORIDES OF KETONES.

In order to solubilize chlorides of ketones contained in a cellulose pulp treated with chlorine, the soda in wash alkaline liquor derived from lixiviation of cellulosic materials is converted into sodium sulphite, the resulting liquid is filtered and is mixed with the pulp.

570. U. S. 1,593,656. JULY 27, 1926. F. E. GREENWOOD. TREATING PULP MILL BLACK LIQUOR.

Rosin soap is separated from pulp mill black liquor and the soap is treated with a solvent and with an acid, such as sulphuric acid. The resulting solution is treated with a solvent immiscible with the solvent first used, the solutions are separated and the solvent is evaporated from the second solution and the residue from the second solution is distilled with superheated steam.

570.1. U. S. 1,596,239. AUG. 17, 1926. J. P. DELZEIT. FUEL BRIQUETS.

Briquets are formed of fine coal associated with a binder of sulphite liquor or the like and a small addition of sulphur, subjected to a carbonizing heat treatment at a temperature of about 315-370 deg. C.

571. U. S. 1,598,880. SEPT. 7, 1926. G. A. RICHTER. WOOD PULP.

The spent liquor resulting from the alkaline digestion of unbleached cellulose pulp is treated with sulphur dioxide and the resulting acid liquor is then used to cook the raw cellulosic material.

572. U. S. 1,599,488. SEPT. 14, 1926. G. A. RICHTER. SULPHITE DIGESTER LIQUORS.

Insoluble monosulphite is precipitated from digester relief liquor, without substantial precipitation of organic substances, *e. g.*, by calcium carbonate, and the monosulphite is then converted into bisulphite by sulphur dioxide for recovery and used as cooking liquor.

573. U. S. 1,599,490. SEPT. 14, 1926. G. A. RICHTER AND W. B. VAN ARSDEL. SULPHUR DIOXIDE RECOVERY.

For recovery of sulphur dioxide from the gases and steam liberated in the blowpit during the blowing operation of a sulphite charge, the gases and steam are passed counter-current in direct of the steam and partially to cool the gases and the gases are further cooled without absorption, and condensation of another portion of the steam is effected by passage in contact with relatively cold inert interstitial material.

574. U. S. 1,600,503. SEPT. 21, 1926. W. H. DICKERSON. SOLIDS FROM SULPHITE CELLULOSE LIQUORS.

Waste sulphite liquor or other substances which at some degree of concentration are sticky, viscid and sirupy are sprayed into a current of heated drying gas at approximately its hottest portion, passed through a drying chamber to form glazed particles and the latter are separated from the gas.

575-578. U. S. 1,605,925-6-7-8. NOV. 9, 1927. V. DREWSEN. TREATING WASTE SODIUM MONOSULPHITE LIQUORS.

Waste sodium monosulphite treating liquor produced in the digestion of vegetable fibrous material is concentrated, treated with caustic lime to form a product containing calcium acetate, incinerated to form sodium carbonate and the latter is leached out. *1,695,926* specifies treating the concentrated liquor with calcium carbonate (20-30 per cent of the weight of the concentrated liquor), concentrating and burning the mixture in the presence of air while agitating to form calcium sulphide and sodium carbonate, grinding and leaching to remove the sodium carbonate, treating the latter with sulphur dioxide to form sodium monosulphite and treating the calcium sulphide while suspended in water with carbon dioxide to liberate hydrogen sulphide for use in producing sulphur dioxide. According to *1,605,927* the waste liquor is dried and burned, soluble sodium salts, including sodium sulphide, are dissolved out and the sodium sulphide is used for the production of sodium bicarbonate and sulphur dioxide, *e. g.*, by use of carbon dioxide under pressure. According to *1,695,928* waste liquor from the sodium monosulphite process of cooking wood, straw or other similar vegetable material is concentrated and treated with an excess of lime and crude niter cake which has been causticized with powdered quicklime, this mixture is burned to eliminate water and organic matter and effect reduction of sulphates and form a fused mixture of calcium sulphide and sodium carbonate and the latter is leached out.

579. U. S. 1,605,929. NOV. 9, 1926. V. DREWSEN. TREATING WASTE MAGNESIUM MONOSULPHITE LIQUORS.

Waste magnesium monosulphite treating liquor produced in the digestion of vegetable fibrous material is boiled with slaked burned dolomite lime to precipitate magnesium hydroxide, the precipitate is filtered off and dissolved in carbon dioxide solution under pressure, the resulting magnesium bicarbonate solution is filtered and treated with magnesium bisulphite to produce magnesium sulphite for reuse as treating liquor.

580. U. S. 1,606,338. NOV. 9, 1927. L. BRADLEY AND E. P. MCKEEFE. TREATING BLACK LIQUOR.

Black liquor is simultaneously concentrated and organic matter is precipitated from it by bringing the liquor into contact with hot gases containing carbon dioxide or other reagent for effecting the precipitation of the organic substances.

581. U. S. 1,606,501. NOV. 9, 1926. L. BRADLEY AND E. P. MCKEEFE. TREATING ALKALINE RESIDUAL LIQUORS.

Alkaline residual liquor such as that obtained in the soda pulp process is concentrated and sulphited by bringing it into contact with a current of gases containing sulphur dioxide.

582. U. S. 1,606,928. NOV. 16, 1926. FINNISH 11,512. JUNE 8, 1925. BRITISH 252,378. MAY 22, 1925. P. G. EKSTRÖM. TREATING ROADS.

Sulphite lye is applied to a road with sufficient bases such as white wash to react with various acid components of the lye and form salts which are insoluble in water.

583. U. S. 1,608,075. NOV. 23, 1926. SWEDISH 63,605. APR. 4, 1923. J. H. WALLIN. DESTRUCTIVE DECOMPOSITION OF WASTE CELLULOSE LIQUOR.

Organic substances, such as waste cellulose liquor, etc., are heated under pressure with a solution of caustic alkali which is used in sufficient excess to react with all acids formed during the process; a temperature of 250 deg. C. or higher and a pressure of 40-500 atmospheres are used, to form alcohols, aldehydes, acids, oils, ketones, amines, ammonia, etc.

584. U. S. 1,614,025. JAN. 11, 1927. L. C. CONNER. MOLDABLE COMPOSITION.

An alkaline solution of black liquor solids is mixed with an aldehyde and a phenolic substance, the mixture is allowed to undergo spontaneous reaction and the condensation product formed is separated by acidifying the solution. In making molded articles, glue, wood flour, hexamethylenetetramine and other substances may be added.

585. U. S. 1,615,102. JAN. 18, 1927. C. G. SCHWALBE. UTILIZING WASTE SULPHITE CELLULOSE LYE.

Waste sulphite cellulose lye is mixed with an absorbent material such as carbonized wood chips or clay or kieselguhr and the mixture is heated in a closed vessel for 4-8 hours at a temperature of about 180 deg. C. and under a pressure not exceeding 10 atmospheres to produce a fuel. *Cf.* No. 667.

586. U. S. 1,615,783. JAN. 25, 1927. M. BERGMANN, E. IMMENDORFER AND H. LOEWE. SEPARATING VEGETABLE AND ANIMAL FIBERS.

In order to protect animal fibers during separation from vegetable fibers by carbonization with strong acid reagents, the material is treated with constituents of waste sulphite liquor.

587. U. S. 1,616,703. FEB. 8, 1927. G. A. RICHTER. UTILIZING RELIEF GASES.

Cool water, acidulated with sulphur dioxide, is passed in contact counter-current to hot relief gases from sulphite digesters so that sulphur dioxide is liberated and condensation of steam and cooling of the sulphur dioxide in the relief gases are effected.

588. U. S. 1,619,036. MAR. 1, 1927. A. J. RAVNESTAD. CLARIFYING WASTE LIQUORS.

Oils, pulp-mill waste liquors or other liquids containing suspended substances are treated with alginates in the presence of sulphuric acid and a settling accelerator such as barium sulphate. Gas may be produced in the liquid electrolytically.

589. U. S. 1,622,474. MAR. 29, 1927. KARL SVEEN. PAPER.

Paper pulp containing aluminium sulphate or other mordant is treated, prior to passing it on to the wire cloth of a paper-making machine, with a small proportion of a substance, such as glue in solution, which will interact with the mordant to effect contraction or coagulation and serve to facilitate agglomeration of the pulp. Waste sulphite liquor also may be used.

589.1 U. S. 1,623,598. APR. 5, 1927. C. B. JACOBS. CARBON CATALYST.

In producing a catalyst which is suitable for use in accelerating gas reactions the alkali-soluble constituents of wood are decomposed at a temperature below 500 deg. C. to form a carbon which is more reactive chemically than carbon produced at a higher temperature.

589.2. U. S. 1,623,764. APR. 5, 1927. S. R. WAGEL. COAL BRIQUETS.

Bituminous coal is mixed with clay and with a binder of waste sulphite liquor, clay and asphalt and the mixture is subjected to alternate heating and cooling.

590. U. S. 1,626,208. APRIL 26, 1927. THEODORE NAGEL. BINDER FOR FUELS.

Alcohol slops and sulphite liquor are mixed and used as a binder for fuel which, after pressing, is heated to 250-500 deg. C. to convert the binder into a hard water-insoluble, smokeless material.

591. U. S. 1,629,448. MAY 17, 1927. V. DREWSEN. TANNING MATERIAL.

Waste sulphite liquor is cooked with lime at a temperature of about 130 deg. C. until the lignosulphonic components of the liquor are converted into organic acids with the formation of a complex precipitate; carbon dioxide is passed through the mass until it is neutralized, thus precipitating calcium carbonate and calcium sulphite and redissolving various organic precipitated constituents; after the precipitate is filtered out the filtrate is concentrated and treated with sulphuric acid equivalent in quantity to the calcium present.

592. U. S. 1,631,789. JUNE 7, 1927. J. B. BEVERIDGE. PROCESS OF MAKING PULP.

Pulp is produced by treating wood or other fibrous substances with the waste liquors obtained from the treatment of wood in aqueous solutions of sodium bisulphate and thereafter treating with aqueous solutions containing caustic soda and sodium sulphide.

593. U. S. 1,637,515. AUG. 2, 1927. LINN BRADLEY AND E. P. MCKEEFE. TREATING RESIDUAL PULP COOKING LIQUORS.

Residual liquors containing essentially sodium sulphite or sodium sulphite and caustic alkali are concentrated and sodium sulphite is crystallized from the concentrated liquor.

594. U. S. 1,638,061. AUG. 9, 1927. E. L. RINMAN. TREATING WASTE CELLULOSE LIQUORS.

The waste liquor is treated with calcium hydroxide and subjected to dry distillation in the presence of steam; the dry distillation is interrupted at a temperature of about 400 deg. C. and the retort residue is afterwards removed and granulated to pieces of about 3 mm. size and burned to a temperature of about 750 deg. C., so that all organic substances are consumed and the lime is burnt to calcium oxide.

595. U. S. 1,646,084. OCT. 18, 1927. T. L. DUNBAR. PROCESS OF HEAT AND LIQUOR RECOVERY IN THE SULPHITE PROCESS.

About 50 per cent of the spent liquor is mixed with fresh cooking liquor, while the remainder is mixed with an alkaline solution and used in the preparation of sulphate cooking liquor.

596. U. S. 1,652,725. DEC. 13, 1927. C. H. MILLIGAN. RECOVERY OF SODIUM COMPOUNDS.

Waste sulphite liquor from cooking wood or other aqueous solution containing sodium sulphide or other alkali metal sulphide is treated with an organic acid such as abietic, oleic, stearic or palmitic acid capable of displacing hydrogen sulphide and which is replaceable by sulphur dioxide and the reaction mixture is then treated with sulphur dioxide.

597. U. S. 1,653,416. DEC. 20, 1927. A. F. RICHTER AND F. A. AUGSBURY. PROCESS FOR HEAT AND LIQUOR RECOVERY IN THE SULPHITE PULPING PROCESS.

The relief gases and liquor and the spent liquor are collected under pressure in one or more acid accumulators. The low pressure relief gas is admitted to the top of the accumulator, where it is absorbed by a spray of cold acid from the acid storage tanks. The high pressure relief gas is admitted at the bottom of the accumulator and is absorbed as it bubbles up through the acid, provision being made for admitting part of the high pressure relief gas at the top of the accumulator when the pressure therein falls too low. The acid from the accumulator is either pumped or forced by steam pressure into the digesters.

598. U. S. 1,654,603. JAN. 3, 1928. G. A. RICHTER. PROCESS FOR UTILIZATION OF HEAT AND RECOVERY OF ALKALI IN THE PRODUCTION OF HIGH ALPHA CELLULOSE FIBER.

599. U. S. 1,662,299. MAR. 13, 1928. M. F. COUGHLIN. ROAD BINDER.

A mixture is used comprising asphalt treated with 2.5 to 5 per cent of lime or other basic and bituminous substance, sulphite liquor and lactic acid (which reduces the viscosity).

600. U. S. 1,666,696. APR. 17, 1928. R. GRIESSBACJ AND J. EISELE. UTILIZING LIGNIN.

Lignin from wood meal or similar material is extracted with an organic halogen-containing solvent such as ethylene chlorohydrin to extract vanillin and other substances which may be recovered.

601. U. S. 1,668,961. MAY 8, 1928. A. E. HANSEN AND A. C. RUGER. PLASTIC COMPOUND.

Paper mill sludge is used with rubber, plaster of Paris, etc., for making building boards or other products.

602. U. S. 1,670,156. MAY 15, 1928. W. H. HOWELL, JR. BLACK LIQUOR.

After cooking wood in a digester with steam and a chemical liquor such as sodium hydroxide or sulphate, the spent liquor is withdrawn and immediately while still at a high temperature, it is subjected to a vacuum to evaporate and concentrate it and is heated by indirect contact with steam withdrawn from the digester.

602.1. U. S. 1,673,356. JUNE 12, 1928. HENRY B. HANLEY. CORE BINDER.

A binder for use in metal forming comprises a concentrated sulphite liquor preparation, oil and bentonite or similar material.

603. U. S. 1,680,043. AUG. 7, 1928. GUSTAF O. W. HEIJKENSKJÖLD. SULPHITE LIQUOR IN PRODUCTION OF YEAST.

An apparatus and process are described in which acid waste sulphite liquor may be neutralized to "at least the neutral point," filtered and then added together with other desired nutrient substances for yeast, to a wort of high sugar concentration, in which yeast is being propagated with aeration.

604. U. S. 1,680,540. AUG. 14, 1928. BRITISH 273,267. JUNE 23, 1926. E. HÄGGLUND. TREATMENT OF SODA AND SULPHATE BLACK LIQUOR.

The liquor is heated under pressure to precipitate the main portion of organic substances as carbonaceous and pitchy material;

the liquor is separated from the precipitate, evaporated to dryness and fractionally lixiviated to separate the acetate from the less soluble soda. The latter is afterwards causticized to obtain a liquor for further use. Before lixiviation the dry residue may be heated to about 300 deg. C. to decompose organic substances other than acetate. Volatile products such as methanol may be recovered.

605. U. S. 1,683,628. Sept. 11, 1928. George A. Richter. Recovery of waste gases.

In recovering sulphur dioxide from hot blow-pit vapors and gases, the latter are conducted through spiral brick or other suitable confined inert interstitial material in counter-current flow to cold acidulated water, so that vapors are condensed and the gases are cooled; the cooled gases are then led through another mass of interstitial material in contact with water to effect absorption of sulphur dioxide; the acidulated water for the first-mentioned treatment is supplied from the second stage of the process and the sulphur dioxide liberated in the first stage may be reused in the pulp manufacture.

606. U. S. 1,684,712. Sept. 18, 1928. Canadian 271,893. June 28, 1927. Swedish 65,632. Sept. 8, 1926. Finnish 12,354. Sept. 18, 1926. Austrian 107,581. May 15, 1927. Max P. Nitsche. Fertilizer.

Sulphite waste liquor is mixed with a considerable amount of potassium sulphate and evaporated in vacuum to drive off all free and bound sulphurous acid and for the removal of water and other volatile substances and then mixed with lime or Thomas phosphate to neutralize the excess of acid. The sulphurous acid which is driven off may be used for the preparation of new cooking liquor.

607. U. S. 1,685,754. Sept. 25, 1928. George A. Richter. Recovery of sulphur dioxide.

The hot digested contents of a sulphite digester are discharged into a blowpit, hot sulphur dioxide and vapors liberated in the blowpit are passed in direct contact with and in counter-flow to cold water supplied in such regulated amount that the largest fraction of sulphur dioxide is cooled without being absorbed and passes on in a cooled condition for absorption; some sulphur dioxide is also recovered from the hot effluent water.

608. U. S. 1,685,800. Oct. 2, 1928. Webster E. Byron Baker. Treating sulphite waste pulp liquor.

In order to recover sulphite material useful in preparing sulphite cooking liquor, the waste liquor is neutralized with an alkaline earth metal base, such as lime, to give a pH of 9 or a greater alkalinity and to decompose the reversibly combined sulphur dioxide and increase the recovery of sulphur as monosulphite; in preparing the cooking liquor, the solids are treated with cooking acid containing free sulphur dioxide for producing bisulphites.

609. U. S. 1,685,929. Oct. 2, 1928. Finnish 11,287. Sept. 2. 1925. W. D. Mount. Causticizing unit.

610. U. S. 1,689,534. Oct. 30, 1928. George A. Richter. Kraft paper.

Wood chips or other raw cellulosic material is digested in a liquor containing sodium sulphide, the pulp is separated from the spent liquor and the latter is concentrated and evaporated and its inorganic content is smelted and substantially all the sodium and sulphur values are recovered in the form of sublimed solids and sulphur dioxide which are formed in the smelting and are absorbed in alkaline aqueous liquor, for further recovery in the smelting.

610.1. U. S. 1,692,136. Nov. 2, 1928. Izador J. Novak. Friction material.

A friction material suitable for brake linings or clutch facings with an asbestos base contains a binder comprising the solid residue of waste sulphite liquor produced by drying the liquor.

611. U. S. 1,693,586. Nov. 27, 1928. Edward H. French. Recovering resinous products.

In the treatment of resinous woods with alkaline liquor, such as sodium sulphide and sodium hydroxide, impure rosin is liberated from the alkaline liquors by passing an acid gas, such as sulphur dioxide, through the liquor, the liberated rosin is removed from the liquor and is dissolved in a hydrocarbon solvent, such as benzene, toluene or gasoline, the solution of rosin and solvent is distilled under a high vacuum and condensation and separation of the rosin from the solvent is effected. An apparatus is described.

612. U. S. 1,696,374. Dec. 25, 1928. Carl A. Agthe. Dispersi system.

Material to be emulsified by dispersion, such as fish oil, pitch or cresol, is mixed with both sulphite cellulose lye and colloidal silica.

613. U. S. 1,699,257. Jan. 15, 1929. John T. Travers. Treating strawboard waste.

Waste such as the fluid wastes from strawboard manufacture is initially subjected to the action of calcium sulphate and calcium hydroxide, the precipitated material is permitted to settle, the effluent is removed and the removed effluent is treated with a mixture containing mono-calcium phosphate (such as a mixture also containing waste cement dust and ferrous sulphate) in order to effect coagulation.

614. U. S. 1,699,258. Jan. 15, 1929. John T. Travers. Treating sulphite pulp waste.

Sulphite pulp mill waste is permitted to stand quiescent in a settling zone to permit suspended matter to settle out and the liquid waste thus separated from substantially all the suspended matter is then passed through porous calcium carbonate and maintained in contact with the calcium carbonate for about 2 minutes, in order to clarify the effluent.

615. U. S. 1,699,294. Jan. 15, 1929. W. Hoskins. "Hot joint paste."

A paste suitable for sealing pipe joints exposed to high temperatures comprises graphite and solids from sulphite waste liquor.

616. U. S. 1,699,808. Jan. 22, 1929. Swedish 63,207. June 21, 1927. Erik L. Rinman. Treating waste sulphite liquor.

The waste liquor is evaporated and combustion of its combustible matter is then effected in such a manner that the sodium compounds present are converted into sodium sulphide and soda; the combustion residue is dissolved in water and treated with an oxide of a metal such as zinc oxide, the sulphur compounds of which are insoluble in sodium hydroxide solution so that all the sodium sulphide is transformed into sodium hydroxide; the separated solution is then treated with sulphur dioxide to produce fresh digester liquor.

617. U. S. 1,699,845. Jan. 22, 1929. Guy C. Howard. Treating waste sulphite liquor.

An alkaline solution of sulphite liquor from which the major portion of the calcium lignosulphonic acid constituent has been previously decomposed and removed is treated with an excess of a solid reagent such as lime to effect complete decomposition and removal of the residual ligninsulphonic acid and the precipitate and associated solid reagent thus formed are used together in treating a further quantity of the liquor to effect removal of the major portion of its calcium lignosulphonic acid constituent.

618. U. S. 1,701,272. Feb. 5, 1929. John J. Naugle. Carbonaceous product from electric furnace.

A product having an ash content of not more than about 3 per cent is obtained by heat treatment of carbonized residues of soda pulp, liquor or the like. The product is suitable for treating sugar solutions, etc.

619-622. U. S. 1,702,586-7-8-9. Feb. 19, 1929. Linn Bradley and Edward P. McKeefe. Treating residual liquor from sulphite pulp manufacture.

Liquor from cooking pulp with sodium sulphite, with or without the use of sodium hydroxide, is evaporated to dryness and calcined to drive off sulphur compounds. The residue is high in sodium carbonate and also contains sodium sulphite; it may be leached and sulphited. *1,702,587* specifies calcining under conditions which avoid oxidation or reduction of the sodium sulphite. *1,702,588* specifies producing carbonate from the sulphite in the evaporation and calcination. *1,702,589* specifies producing caustic alkali by calcining the evaporated liquor, heating the residue in an electric

furnace to produce a product containing alkali metal carbide and treating this product with water.

623. U. S. 1,703,272. Feb. 26, 1929. Gustaf O. W. Heijkenskjöld. Yeast cultivation.

The liquor is rendered alkaline, suitably by the addition of calcium carbonate, "mesa" or ammonia, precipitated material is removed and the treated liquor is then added to yeast propagating wort and the character of the latter is regulated so that it is alkaline at the end of the process. An apparatus is described.

624. U. S. 1,703,373. Feb. 26, 1929. John T. Travers. Treating polluted waste water.

Tannery or strawboard wastes or similar polluted liquid of alkaline reaction, which contains organic matter, is treated with about 1 per cent of a solution comprising sulphuric acid, 1 part, and water, 100 parts, admixed with clay, 9 parts, which serves to render it suitable for discharge into natural streams.

625. U. S. 1,710,272. Apr. 23, 1929. George A. Richter. Fertilizer.

A fertilizer is prepared from the spent liquor resulting from the digestion of cellulosic material such as wood in a sulphurous acid solution of ammonium salts, containing substantially all the organic matter removed from the cellulosic material.

626. U. S. 1,714,459. May 21, 1929. Sidney D. Wells. Softening wood, etc.

Softening of wood, straw, grass or other vegetable fibers is effected by spent liquors from pulp-cooking processes, using sodium hydroxide "free from more powerful chemicals" and containing sodium carbonate and the material may be used without further refining and in the presence of sulphur.

627. U. S. 1,719,129. July 2, 1929. George A. Richter. Waste liquors.

Liquors such as those produced by the digestion of wood with a solution containing sodium sulphate and sulphur dioxide are concentrated and the inorganic material is smelted in a reducing atmosphere and an aqueous solution is prepared from the smelted product for alkaline digestion of raw cellulosic material. An apparatus is described.

628. U. S. 1,719,130. July 2, 1929. George A. Richter and Wallace B. Van Arsdel. Recovery of heat and chemicals.

Gases from the smelting and combustion of spent liquor material resulting from the digestion of cellulosic material with sodium sulphate or other reagents are passed periodically through one mass of tile, brick or rock or other inert interstitial material and then through another similar mass, thus causing a condensation of water vapor present and formation of a solution of soluble compounds in the condensate. This solution is recovered and used for the preparation of fresh digesting liquor and heat transfer from one mass of the inert material is effected while the gases are being passed through the other. An apparatus is described.

629. U. S. 1,723,800. Aug. 6, 1929. Wilhelm Michael and Albert Palm. Purifying sulphite waste liquor.

Free sulphur dioxide is expelled, the liquor heated in a closed vessel to above 150 deg. C., carbon is filtered off and ammonia is expelled by use of a stronger base such as calcium hydroxide.

630. U. S. 1,728,252. Sept. 27, 1929. Francis G. Rawling. Recovery of soda.

Waste liquor, such as is obtained by pulping wood with sodium sulphite and sodium carbonate, is concentrated and incinerated to form an ash; the ash is treated with a mixture of air and steam at a temperature to effect combustion of a part of the carbon present in the ash, thereby converting the sodium sulphide to carbonate and eliminating hydrogen sulphide; the resultant ash is dissolved in water to obtain sodium carbonate free from sulphide.

631. U. S. 1,731,354. Oct. 15, 1929. Norwegian 46,772. Mar. 11, 1927. Carl G. Schwalbe. Carbonizing the organic constituents of sulphite cellulose lye.

The lye is treated with sulphuric acid less than 3.6 kilograms per 100 liters of the lye and heated for about 8 hours to about 180 deg. C. under 10 atmospheres pressure, in order to obtain a carbonized material for fuel, etc.

632. U. S. 1,731,433. Oct. 15, 1929. Paul Onnertz, Hans Wesche and Karl Brodersen. Non-deliquescent product from sulphite waste liquor.

A non-deliquescent product (suitable for redissolving in water for various uses) is obtained by adding an alkali metal dichromate to the liquor and evaporating to dryness.

632.1. U. S. 1,737,590. Dec. 3, 1929. Bjarne Johnsen. Chemical pulping process.

Wood or other material to be pulped is cooked with a liquor such as an acid or neutral liquor to which has been added a solution of waste cooking liquor containing carbohydrates, from which the lignin compounds have been wholly or partially removed.

633. U. S. 1,743,080. Jan. 7, 1930. Linn Bradley and Edward P. McKeefe. Treating wood-cooking liquor.

Residual liquor from the cooking of wood with a cooking liquor containing sodium hydroxide and a sodium-sulphur compound, such as sodium sulphide or sulphite is dried and heated with calcium carbonate under chemically reducing conditions at a temperature sufficient to convert calcium carbonate into calcium oxide; the resulting product is mixed with water and agitated at an elevated temperature to produce a solution containing sodium hydroxide and sodium-sulphur compounds suitable for further use.

633.1. U. S. 1,743,985. Jan. 14, 1930. German 497,715. June 10, 1927. Robert W. Strehlenert. Fuel from waste sulphite liquor and sawdust.

Sawdust is mixed with a waste sulphite liquor in such concentration and proportion that the mixture on a dry basis contains about 25-60 per cent dry materials derived from the sulphite liquor, the mixture is partly dried and then treated with live steam to effect further heating and moistening; the moistened mixture is briquetted under pressure and the briquets are dried at a temperature not substantially in excess of 200 deg. C.

634. U. S. 1,747,047. Feb. 11, 1930. Linn Bradley and Edward P. McKeefe. Using effluent liquor from the sulphite pulp process to prepare liquor for the soda pulp process.

Effluent liquors from a sulphite process are causticized to produce a cooking liquor suitable for use in the soda pulp process.

635. U. S. 1,749,557. Mar. 4, 1930. French 628,775. July 5, 1927. Pierre A. Barbou. Sulphur dioxide and soda from sodium bisulphite cooking liquors.

In order to recover sulphur dioxide and sodium oxide from residual solutions, such as those from cooking cellulosic material with sodium bisulphite, the liquors are treated with an alkaline earth base such as lime to form sodium hydroxide, an organo-sodium compound and an insoluble alkaline earth metal sulphite; the liquors thus obtained are treated with a bisulphite such as calcium bisulphite to form a sodium sulphite with precipitation of organic matter in the form of organo-metallic compounds.

636. U. S. 1,753,128. Apr. 1, 1930. Ralph H. McKee. Recovering alkali from black ash residue.

Excess water is removed by filtration from a mixture of black ash residue from soda pulp mills and calcium carbonate sludge from reaction of sodium carbonate solution and milk of line, and the resulting product is passed through a heated zone.

637. U. S. 1,754,207. Apr. 8, 1930. Linn Bradley and Edward P. McKeefe. Treating residual liquors from alkali digestion of cellulose materials.

A liquor such as that from the digestion of wood with soda solution is treated with a sulphate solution such as sodium acid sulphate to remove organic material and the resulting solution without calcination is treated to produce a caustic alkali solution.

638. U. S. 1,754,208. Apr. 8, 1930. Linn Bradley and Edward P. McKeefe. Treating residual liquors from alkali digestion of cellulosic materials.

A process is described of treating pulp-liquor residues, etc., by furnacing to produce a product containing sodium carbonate and carbon with a minimum loss of sodium compounds with the fur-

nace gases, treating the product with aqueous liquor to dissolve the sodium compounds and causticizing the solution in a two-stage treatment, first with a less and then with a greater proportion of calcium hydroxide than is chemically equivalent to the sodium carbonate present, with sludge separation between the two stages of treatment.

639. U. S. 1,754,902. Apr. 15, 1930. Wm. D. Mount. Sulphate wood pulp.

Wood is digested with alkali liquor, the pulp and spent liquor are separated, the liquor is evaporated and the solid organic matter in it is burnt, the resulting ash is dissolved, solid impurities are separated from the solution and it is causticized and separated from sludge for reuse in wood digestion.

639.1. U. S. 1,756,432. Apr. 29, 1930. William C. Munro. Continuous sulphate recovery process.

The process includes cyclic reutilization of the alkali compounds of the spent cooking liquor for the production of fresh cooking liquor and also the cyclic reutilization of the causticizing lime.

640. U. S. 1,758,247. May 13, 1930. Albert L. Clapp. Utilizing spent lime-cooking liquor.

Cellulosic material, such as manila rope, is cooked and beaten in the presence of the spent lime-cooking liquor and the resulting material is run off on a paper machine and the paper formed is treated with sodium silicate solution.

641. U. S. 1,762,481. June 10, 1930. Robert A. Marr. Cementitious products from digestion of cellulosic materials.

Material, such as straw or wood, is digested in a solution containing sulphates such as those of zinc, potassium and sodium in a concentration below 5 per cent, followed by pulping and separation, in substantial part at least, of connective matter from pulp and its isolation and molding.

642. U. S. 1,764,600. June 17, 1930. Webster E. B. Baker. Tanning composition.

In making sodium lignosulphonate with production of a product containing calcium by neutralization and concentration of waste sulphite liquor, the calcium is removed by interchange with the sodium of a zeolite and the sodium lignosulphonate is recovered and is acidified with an organic acid having a relatively low dissociation constant.

643. U. S. 1,764,601. June 17, 1930. Webster E. B. Baker and Fred G. Roberts. Lignin gel.

In the production of lignin in the form of a reversible colloid gel devoid of lignosulphonic acid, sulphite cellulose extract is treated with chromic acid solution and the gel is washed with water.

644. U. S. 1,765,560. June 24, 1930. German 489,330. Jan. 18, 1928. Société Barbou & Cie. Recovering sodium sulphite.

Sodium sulphite used in opening up vegetable fibrous materials is recovered from the spent lyes by treating these with sulphuric acid, causing the sodium sulphate so obtained to react with calcium bisulphite and then treating the solution with sodium hydroxide or sodium carbonate. The organic substances precipitated by the addition of sulphuric acid are separated and destructively distilled. The lyes may be aerated before adding sulphuric acid in order to oxidize unchanged sulphite.

645. U. S. 1,771,829. July 29, 1930. British 321,413. Aug. 7, 1928. C. L. Wagner. Recovering alkali metal compounds from waste liquors.

Waste liquors such as those from paper pulp manufacture, containing organic matter, are burned to recover soda, etc., and to obtain hot gases which may be used to generate steam. Various details of apparatus are described, in which sodium sulphate present in the liquor may be reduced to sulphide.

646. U. S. 1,772,216. Aug. 5, 1930. Erik Hägglund. Utilization of black liquor.

The liquor is submitted to high pressure and heat treatment adapted to precipitate as solid carbonaceous and pitchy material the main portion of organic substances contained therein, then separating the liquid from the precipitate, evaporating at least a portion of the liquid to dryness, submitting the residue to dryness and recovering volatile products.

646.1. U. S. 1,772,792. Aug. 12, 1930. Robert B. Wolf. Acid recovery in sulphite process.

A constant pressure is maintained on the relief line from the digester, gases and liquids are discharged from the relief line into an acid-absorbing medium and the latter is cooled to facilitate absorption. An apparatus is described.

646.2. U. S. 1,778,523. Oct. 14, 1930. Viggo Drewsen. Rosin soap material.

The spent wood treating liquor is concentrated to a specific gravity of approximately 1.1 to 1.15 and submitted to centrifugal separation at a temperature between 25 and 60 deg. C., causing the separation of the rosin soaps dissolved in the liquor.

646.3. U. S. 1,779,535. Oct. 28, 1930. Edward G. Goodell. Treating black liquors.

The black liquor is partially concentrated and sprayed into a heated gaseous medium to form a dried powder, having essentially the same organic content as the liquor; the solid powder is burned as a separate operation and the heat obtained is utilized in the subsequent dehydration of further quantities of black liquor.

646.4. U. S. 1,779,536. Oct. 28, 1930. Edward G. Goodell. Dehydrating black liquor.

The process of dehydrating black liquor consists in heating a dried black liquor product and concentrated black liquor in a finely divided form, burning the resulting volatile gases in the presence of a steam generator, passing the hot gaseous products of combustion in a separate operation into contact with concentrated black liquor in finely divided form to substantially dehydrate said black liquor without substantial change in its organic content and without substantially saturating said gaseous medium and recovering the dehydrated black liquor as a finely divided, practically moisture-free powder.

646.5. U. S. 1,779,537. Oct. 28, 1930. Edward G. Goodell. Regenerating black liquor.

A portion of the black liquor is spray burned under oxidizing conditions in a zone closely above and near the surface of a bed composed of the solid products of combustion of the black liquor and spray dried black liquor solids introduced as such in admixture with sodium sulphate; the heat of combustion of the organic content of the liquor supplies the heat for driving off the water from the sprayed black liquor; the organic content also effects the reduction of the sulphates present in the bed to sulphides.

646.6. U. S. 1,779,768. Oct. 28, 1930. Edward G. Goodell. Processing black liquor.

A solid product is obtained from the compressed solid constituents of black liquor substantially unchanged as to chemical composition.

Canadian Patents

647. Canadian 245,853. Jan. 6, 1925. C. F. Cross. Lignone derivatives.

Lignone derivatives in the form of hydrated colloids containing chromic acid are produced by oxidizing lignone derivatives, resulting from the treatment of lignocellulose material with sulphurous acid, with chromic acid.

648. Canadian 247,469. Mar. 10, 1925. L. Kirschbraun. Bituminous emulsions.

An emulsion consists of sulphite liquor, an earthly colloidal material and bitumen, the bitumen being in the dispersed phase.

649. Canadian 248,488. April 7, 1925. Austrian 103,471 Oct. 3, 1926. C. E. Krebs. Fertilizer.

The acid gases escaping from the concentration of waste sulphate liquor are absorbed in phosphate material, the material is treated with the concentrated liquor and the mixture is subjected to combustion.

649.1. Canadian 252,010. 1926. V. Drewsen. Treatment of waste sulphite liquor.

The waste sulphite liquor is concentrated to a water content of 50 per cent, 25-75 per cent of pulverized lime is added and the mixture subjected to dry distillation in the presence of super-

heated steam yielding acetone, methyl alcohol and other volatile products. The retort residue is calcined, the ash freed from sodium carbonate by leaching and the residue treated with carbon dioxide, transforming the calcium sulphide into calcium carbonate and hydrogen sulphite, the latter burned with sulphur dioxide and this used to transform the sodium carbonate into sodium sulphite. The calcium carbonate may be burnt to lime.

649.2. CANADIAN 252,011. 1926. V. DREWSEN. TREATMENT OF WASTE SULPHITE LIQUORS.

The concentrated liquor is treated with a mixture of dissolved lime and crude niter cake, whose content of acid sodium sulphate has been changed into sodium sulphate and calcium sulphate by caustification with lime and the mixture is burned in a rotating oven for the purpose of reducing the sulphate and forming a molten mixture of calcium sulphide and sodium carbonate.

650. CANADIAN 259,984. APR. 20, 1926. G. A. RICHTER. SULPHATE PRODUCTION.

Waste alkaline cooking liquor containing sodium hydroxide and sodium sulphide is concentrated, the sodium compounds are smelted in a reducing atmosphere and recovered in an aqueous solution; waste acid cooking liquor containing sodium salts is concentrated and is neutralized with a portion of the alkaline liquor; the sodium compounds of the neutralized liquor are smelted in an oxidizing atmosphere and recovered in an aqueous solution; this solution is acidified with sulphur dioxide for use in cooking raw cellulose material.

651. CANADIAN 259,987. APR. 20, 1926. G. A. RICHTER. PULPING PROCESS AND RECOVERY OF WASTE LIQUOR.

Raw cellulose material is digested in an acid sodium compound cooking liquor, the acid liquor is separated, neutralized and concentrated, the sodium compounds are smelted and recovered in an alkaline solution, the alkaline liquor is carbonated for the conversion of certain sodium compounds to carbonate and the alkaline liquor is acidified with sulphur dioxide to produce an acid cooking liquor, which is clarified.

652. CANADIAN 260,376. E. HÄGGLUND. UTILIZATION OF BLACK LIQUOR.

After subjection to heat and pressure, the liquor is mixed with fresh sodium carbonate solution and used for treating fibrous material.

653. CANADIAN 267,295. JAN. 4, 1927. G. A. RICHTER. SULPHUR DIOXIDE RECOVERY.

A process of recovering sulphur dioxide absorbed in a liquid and from hot blowpit vapors and gases comprises passing such liquid when cold through a confined mass of inert interstitial material in countercurrent flow to and in contact with the hot blowpit gases and vapors discharged from a sulphite digester. The liquid is then discharged from the condenser, the temperature of which is increased for removal of the absorbed sulphur dioxide.

654. CANADIAN 270,937. MAY 24, 1927. G. A. RICHTER AND W. B. VAN ARSDEL. SULPHUR DIOXIDE RECOVERY.

Sulphur dioxide is removed from gases and steam liberated in the blowpit during the successive blowing operations of a sulphite digester by passing such gases from each blow through relatively cold inert interstitial material without material absorption and cooling such inert material to its original temperature between successive blows.

CANADIAN 271,893. JUNE 28, 1927. M. P. NITSCHE. SEE No. 606.

655. CANADIAN 275,932. NOV. 29, 1927. W. O. BORCHERDT. DEFLOCCULATION OF COLLOIDS IN MINERAL PULPS.

Mineral pulp is treated with a sulphite waste liquor. The deflocculated colloidal matter can then be removed to a desired extent.

656. CANADIAN 279,809. MAY 1, 1928. H. ADAMS AND A. SHEPHERDSON. LIGNINSULPHONIC ACID.

New derivatives of ligninsulphonic acid (sulphite cellulose pitch) are manufactured by treating the acid at an elevated temperature with sodium hydroxide followed by an acidifying treatment.

657. CANADIAN 280,152. MAY 15, 1928. J. BADDILEY AND A. J. HAILWOOD. LIGNINSULPHONIC ACID.

New, technically valuable products are manufactured by the moderately oxidation of sulphite cellulose pitch with nitric acid.

CANADIAN 283,128. SEPT. 4, 1928. ALFRED H. WHITE. *See* No. 557.

CANADIAN 283,820. OCT. 2, 1928. ALFRED H. WHITE. *See* No. 560.

658. CANADIAN 282,677. AUG. 21, 1928. ANTHONY J. HAILWOOD. LIGNINSULPHONIC ACID DERIVATIVES.

A new derivative of ligninsulphonic acid (sulphite cellulose pitch) is obtained by treating at 110-120 deg. C. under pressure with ammonia solution. The new product is particularly suitable for addition to dispersed dye pastes which are to be dried to powder form. It also finds application as tanning agents.

659. CANADIAN 283,415. SEPT. 18, 1928. WILHELM MICHAEL AND ALBERT PALM. SULPHITE WASTE LIQUOR.

In the process of producing cellulose by means of sulphurous acid and ammonia, free sulphurous acid is blown from the waste liquor, ammonia and a catalytic material is added, the liquor is heated in a closed vessel to a temperature above 180 deg. C., carbon is filtered off, sulphuric acid and oxalic acid are precipitated and filtered off, and the liquor is used again in a following pulping operation after introducing sulphurous acid. After repetition of these operations ammonium salts of organic acids are recovered from the filter and liquor finally obtained.

660. CANADIAN 284,216. OCT. 23, 1928. GEORGE A. RICHTER. WOOD PULP.

The spent cooking liquor resulting from the alkaline treatment of unbleached pulp may be used as make-up liquid, instead of water, in the production of a sulphite liquor for production of sulphite pulp, either by passing it and sulphur dioxide in countercurrent flow through a mass of inert interstitial material, or through a lime tower, or else by employing it for slaking the lime in case the sulphite cooking liquor is formed by passing sulphur dioxide through milk of lime. The spent liquor containing the soluble salts or other organic compounds of sodium or calcium may be employed in the production of a sulphite cooking liquor having either sodium or calcium or sodium and calcium as its basic constituent material or materials.

661. CANADIAN 284,259. OCT. 23, 1928. ANDRE THIRIET. ELIMINATION OF SILICA.

Lyes are exposed to the action of carbon dioxide or of sodium bicarbonate or to both at a temperature of 15 deg. C., so that the dissolved silica is precipitated. The silica precipitate is separated and the carbon dioxide is recovered from the solution by heating.

662. CANADIAN 285,597. DEC. 11, 1928. LINN BRADLEY AND EDWARD P. MCKEEFE. PULP.

Residual liquor from the production of pulp with a cooking liquor containing essentially sodium sulphite with or without caustic alkali is treated, either before or after concentration and while alkaline in reaction, with calcium sulphate to give a precipitate of calcium sulphite and sodium sulphate in solution. The resulting solution is concentrated, sodium sulphate crystallized therefrom and a solution of the sodium sulphate is caused to react with the precipitated calcium sulphite in the presence of a sufficient quantity of acid to give a precipitate of calcium sulphate and a solution of sodium sulphite for reuse in the pulp-making process.

663. CANADIAN 285,952. DEC. 25, 1928. PIERRE A. BARBOU TREATMENT OF RESIDUAL LIQUOR.

The lye or liquor accruing from the boiling of vegetable matter with sodium sulphite is treated with lime at 75 deg. C. in an open or closed container. The mixture so formed is agitated and then allowed to stand. After leaving the mixture for 0.5 hour the liquid supernatant on the precipitate is drawn off and transferred to a further open or closed container. The correct amount of calcium bisulphite solution is now added to the liquor. The mixture is then agitated for a few minutes and allowed to stand. After an hour the clear supernatant liquid is drawn off and neutralized with

sodium hydroxide to obtain a solution of sodium sulphite which may be used for further lixiviating operations.

664. CANADIAN 286,169. JAN. 1, 1929. JOHN S. BATES, HARRIS S. CHALMERS AND PERCIVAL C. AUSTIN. CAUSTICIZING WASTE LIQUORS.

Alkali metal carbonate green liquor of kraft or soda pulp processes is treated in successive portions first with the sludge remaining from treatment of a previous portion and containing calcium hydroxide in amount less than the molecular equivalent of the sodium carbonate present in the portion with substantially complete conversion of the calcium hydroxide and then is treated with fresh calcium hydroxide in amount substantially molecularly equivalent to the original sodium carbonate content of the liquor. The sludge resulting from the second treatment and containing unconverted calcium hydroxide serves for the preliminary treatment of the succeeding portion; thus the excess of calcium hydroxide used in treatment of the first portion is in effect transferred to successive portions and represents the total excess of lime used in treatment of an indefinite amount of liquor.

665. CANADIAN 300,548. MAY 27, 1930. LINN BRADLEY AND EDWARD P. MCKEEFE. COOKING LIQUOR.

Residual liquor from an acid sulphite cooking process, in which the cooking liquor is a mixture of sodium sulphite and sodium bisulphite, and which already contains a high ratio of sodium to sulphur, is treated with some alkaline soda compound and concentrated and the resulting product subjected to a reducing furnacing treatment to form a product containing a considerable proportion of the sodium as sodium sulphide and the remainder as sodium carbonate. A solution of the sodium compounds of the furnace product is prepared which is utilized as a cooking liquor in the sulphide type of cooking process. Residual liquor from the sulphide type of cooking operation is concentrated and furnaced to decompose organic compounds and to form a product containing the soda largely as carbonate. A solution of the resulting sodium compounds is prepared and subjected to a regulated sulphiting treatment to regenerate a suitable cooking liquor containing sodium sulphide and sodium bisulphite.

666. CANADIAN 300,549. MAY 27, 1930. LINN BRADLEY AND EDWARD P. MCKEEFE. REGENERATION OF COOKING LIQUORS.

Wood chips are cooked with an acid sulphite type of cooking liquor which contains sodium sulphite and sodium acid sulphite, the resulting residual liquor is separated from the pulp and concentrated, the solid constituents are furnaced, whereby sodium carbonate and sodium sulphide are formed, these compounds are dissolved in water and the solution is causticized by lime to convert the greater part of the sodium carbonate into sodium hydroxide, the liquor is separated from the lime mud and thereafter is employed for cooking wood.

666.1. CANADIAN 301,642. JULY 1, 1930. LINN BRADLEY AND EDWARD P. MCKEEFE. PULP.

The residual liquor from pulp digestion with considerable sodium sulphite and a less amount of sodium bisulphite is separated from the pulp, the water removed and the organic compounds are decomposed by heating in a current of hot gases; in this process a substantial amount of sulphur is eliminated and the resulting ash contains more sodium carbonate than sodium sulphide. The sodium compounds thus produced are dissolved and causticized with lime and the causticized liquor is used to digest fiber-bearing material. The residual liquor from the pulp thus produced is separated, the water removed and the organic compounds are decomposed by heating in a current of hot gases; some sulphur is thus eliminated and the resulting ash contains considerably more sodium carbonate than sodium sulphide. The resulting sodium compounds are dissolved and sulphited to produce a cooking liquor which contains considerable sodium sulphite and a less amount of sodium bisulphite and the cycle is repeated one or more times.

666.2 CANADIAN 301,643. JULY 1, 1930. LINN BRADLEY AND EDWARD P. MCKEEFE. TREATMENT OF RESIDUAL LIQUORS.

Wood is digested by an acid cooking liquor supplied with a sodium sulphite under conditions to produce a bleachable chemical pulp; a second lot of wood is digested with alkaline cooking liquor supplied with sodium hydroxide and sodium sulphide (either with or without sodium sulphite). Residual liquid from the acid digestion is concentrated and the resulting residual is treated to decompose organic matter and to obtain some sodium sulphide. Some of this sodium sulphide is subsequently employed in the alkaline cooking liquor referred to above. Residual liquor from the alkaline digesting treatment is concentrated and the resulting residue treated to decompose organic matter to obtain some sodium carbonate. Some of this is utilized in producing a sodium sulphite and the latter is used in cooking liquor for the acid digestion treatment.

(To be continued)

Swedish Cellulose Co. TAPPI Member

The most recent company to join the Technical Association of the Pulp and Paper Industry is the Svenska Cellulosa Aktiebolaget, a subsidiary of the Kreuger and Toll Company of Stockholm, Sweden. This company was formed by a merger of several pulp and paper companies during the past year. Among the companies included in the merger are the following: Bergvik och Ala Nya A.B at Soderhamn, Bjorknas Nya Sagverks A.B at Harnosand, Holmsunes A. B., Kramfors A.B, at Kramfors, Nyhamns Cellulosa A.B, at Essvik, Salsakers Ansags A.B, Sunds A.B at Sundsvall, Sundvalls Cellulosa A.B at Essvik, Svartvik Travaruaktiebolaget at Svartvik, Torphammars A.B at Torphammar.

Gosta Hall a former member of TAPPI who was at one time chief chemist of the Albemarle Paper Company, has recently been appointed technical director for all the pulp and paper mills in the Kreuger and Toll combine. The company has launched out into a comprehensive and intensive research program.

Gustav Asplund, a member of TAPPI who was formerly attached to the Swedish Consulate in New York City is now in the general manufacturing offices of the company in Stockholm. Mr. Hall expects to visit America soon and may possibly attend the annual meeting of the Technical Association in New York on February 17 to 19, 1931.

Chemical Engineering Courses At Michigan

Opportunities for special study and facilities available at the University of Michigan, Ann Arbor, are comprehensively described in a new bulletin just issued by the Department of Chemical Engineering. Several courses explained in the booklet cover subjects of direct importance to paper technologists, and a number of research papers on these same general topics will be found in the list of publications given in the back of the bulletin.

The East Engineering Building gives unusual facilities for advanced laboratory work as may be gathered from the illustrations in the middle of the bulletin. In this building is the paper laboratory referred to in the bulletin which is suitably equipped for instructional and research work.

The Department of Engineering Research has important contacts with the chemical industry and several industrial fellowships will be available for graduate students next year. Application should be made by March 1. Copies of the bulletin may be secured by writing the Chemical Engineering Department, University of Michigan, Ann Arbor, Mich.

Pacific Straw Paper Co. To Improve Water Supply

PORTLAND, Ore., December 27, 1930.—The Pacific Straw Paper and Board company, Longview, Washington, has made application for a permit from the War department engineer's office, Portland, Ore., to construct two intakes from the Cowlitz river in front of its plant at Longview to take water from the Cowlitz. The proposed work consists of laying pipe on a trestle runway extending into the river about 100-feet channelward of the high water shore line, and to a height of about 21 feet above low water, for the purpose of taking water for plant operation.

Section of the

COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

Federal Trade Commission Report on Cost Work In Open Price Trade Associations*

(Continued from the issue of January 8, 1931)

Section 5

Aids in Estimating on Specific Jobs: Quantity Surveys

Estimates preliminary to making bids on proposed contracts are mainly based upon cost-accounting data. The cost of materials to be used can be handled independently, the values being based on the application of market prices to quantities computed from the specifications of the proposed contract. This, of course, assumes a regular market, and it is quite possible that the accounting department would prefer to make its estimates on what has actually been paid for material on hand. As to the quantities involved, there is, of course, substantially no difference between how they will work out for one contractor and other, if the specifications are definite enough and if the requirements of the contract are lived up to.

The common character of the needs of those estimating on a particular class of contracts means that an association can be helpful through supplying aids of various sorts that will tend to prevent the member from making miscalculations and thus save his money. Sometimes the cost-accounting manuals of associations, whose members do work involving estimates in advance, contain explicit instructions as to how to make estimates, together with various aids to be used in computing, and sometimes cost figures for work of a similar nature, based on average or typical experience of the group, are circulated. The latter figures may be man-hours required, or they may be costs per hour for the different kinds of work. In both of these instances the lack of an entirely objective basis for an estimate distinguishes the situation from that of the quantities involved in a specific set of plans. Sometimes an association provides devices analogous to computing tables and slide rules, designed to fit the needs of a particular class of contractors. Estimating sheets, also, are furnished, which call attention in particular to each and every item for which some allowance should be included in making a bid.

Listing bureaus or quantity surveys, however, are the most important kind of aid which an association may afford along this general line to contractor members. They are sometimes operated as private enterprises, which fact would seem to suggest that they have a definite business use. But they appear to be more often operated, either directly or indirectly, as a department of trade association work. They are, of course, found particularly, if not exclusively, in the various branches of the construction industry. But not all, even of the larger cities, have them. The first bureau of the sort appears to have been established about 20 years ago, and is still operated, in effect, as a specialized trade association, doing only this particular sort of work for its members Quantity-survey bureaus—whether operated as departments of general trade associations or not—are apparently of rapidly growing importance.

The relation between quantity-survey work and budgeted costs is worth calling attention to. It is possible that the idea of budgeted costs finds favorable soil in the same lines of production as do the quantity surveys. If so, the relationship suggests a natural limitation on the applicability of the idea of budgeted costs, which its advocates do not fully appreciate.

Quantity surveys are cooperative enterprises, and the direct object is the saving of expense in the making of duplicate estimates, one by each bidder on a proposed job. If a dozen subcontractors undertake to bid on an electrical installation in a large office building, each must compute the quantity of materials involved, unless the quantities can be determined by a bureau serving all of them. It is fair to assume that the cost, where the work is done individually, will be about twelve times what it is when done by a bureau once for all. It is possible that there may be a further saving in time through the greater expertness of the bureau, but this is not essential. It is important, however, that the bureau will less often make a mistake in its arithmetic, and such mistakes are costly.

Doubtless the trade associations feel that the mistake of a single contractor in underestimating quantities is doubly costly, since it means not only a loss to him but also demoralized competitive conditions, because somebody is ignorantly taking work at less than cost. Advocates of quantity-survey bureaus also allege that there is a saving in the cost of plans, since not so many sets have to be supplied. With a distinct bureau becoming expert in the handling of plans and representing the organized opinion of the subcontractors, it is possible that pressure may be brought to bear on the contractors and architects for improved plans, containing more definite and clearer specifications than might otherwise be furnished, and it appears that this does occur.

It is alleged that the quantity-survey bureau is a help to the general contractors as well as to the subcontractors, but the former do not seem to think that the institution is a desirable thing. It perhaps should be said, at least, that the individual subcontractor is in no sense obliged to accept the results reported by a quantity-survey bureau, and also the bureau report should be made in such detail that the subcontractor can easily

* From Letter from Chairman of Federal Trade Commission transmitting to Senate report on "Open-Price Trade Associations."

exercise his independent judgment as to whether he wants to follow the estimate in every particular or not. Of course, the general use of the quantity-survey figures in bidding means greater uniformity in bids. It should not mean absolute uniformity, however, and it is not necessary to suppose that it is the purpose of the advocates of such bureaus merely to bring about uniformity of prices.

One association of subcontractors that has recently established a quantity-survey department includes among the functions of the civil engineer who is in charge the giving of an opinion as to man-hours of labor as a supplement to the computed quantities of materials. This brings the thing closer to the suggesting of a price to the members of the association that they will use in making the bid. The circulating of average hourly costs for wages for different classes of work in connection with executing construction contracts is getting into still more dangerous ground, although it is not necessarily anything more than the cost-statistical work elsewhere considered in this chapter.

With reference to the suspicious attitude of the law as to uniformity of prices and as to efforts tending to bring about uniformity as regards any element in price, it would probably be safer for quantity-survey bureaus to confine their work strictly to the engineering aspect of the plans and specifications they study. The price per hour paid for labor and the number of hours of labor of different kinds used is by comparison with quantities of materials used, rather a question of efficient management and more distinctly an affair of the individual contractor.

The question of the legality of quantity-survey bureaus was at issue in a case brought in the State of Missouri in 1921 against the Planing Mill Listing Bureau of St. Louis. After four and a half years' litigation the supreme court of the State decided that the activities of the listing bureau were entirely legal.[3]

Section 6
The Base-Price Practice

Nature of the Practice

The base-price practice is in part a method of quotation. Thus if a prospective purchaser makes inquiry for a commodity for which there is a customary list price for the most important varieties or sizes, these being the base varieties, and standard extras or differentials for all other varieties and sizes, all that it is necessary for the seller to do in making an offer is to quote his discount from the price for the base variety or varieties. The purchaser can then readily compute the prices for all sizes, etc. The convenience of this practice in making it possible to dispense with a multiplicity of quotations is obvious.

A similar device, constituting another form of the base-price practice, is the use, of a base size (or variety) on which no standard price is fixed, merely "extras" for other varieties being established. The quotation of a price for the base size by itself, immediately indicates the prices of all the other varieties, which are computed by adding the respective extras. In this case, therefore, only the price differentials are listed. But the practice may be based upon a comprehensive price list established in the industry, which identifies and prices thousands of articles, grades, and sizes, the differentials being made definite by the prices, which, however, themselves do not, it may be, enter into actual transactions, being subject to a varying discount of as much as 50 per cent.

The idea that the base-price practice relates to price lists and can be inferred from their form is not adequate. A gross price list is one that is subject to discount in actual transactions and is not necessarily a base-price list. A universal price list is one that is used throughout an industry, with the implication that each manufacturer is quoting his own discounts from such a list. The universality of the list, however, though pointing in that direction, does not constitute the characteristic feature of the base-price practice, notwithstanding the fact that gross lists and universal lists are sometimes referred to, as if these were of themselves necessarily base lists.

Under the base-price practice the differences between prices for different specific products are constant for the various manufacturers. Such constancy may be relative or absolute and does not involve fixity of prices. The difference may be expressed, as above noted, not by means of discounts from a common detailed price list, where the absolute price for each article is stated, but as either percentage or absolute differentials for special sizes, shapes, grades, or types, according to their difference from the standard shape or type[4]. The detailed price list for every article, however, appears to be more common than the expression of the same result by differentials or "extras", etc. A base-price list is usually issued by each manufacturer under his own name, though it may be printed from the same plates for all.

Evidence of the base-price practice is the characteristic method of using a common list. A sale between a manufacturer and a wholesaler, for example, may be effected merely by agreeing on the discount from the list without the buyer stating the quantities or the specific articles he wants, although the discount will naurally be influenced by the stated total amount of the order. The fact that custom, rather than the cost accounts or estimates of the individual manufacturer, determine the differences between prices for different articles is a characteristic feature of the practice. Various manufacturers with differing relative costs use the same price differentials. Price quotations, where the base-price practice is in use, are made in terms of a discount from the list which is the same discount for all articles related to a particular base type of commodity, commonly for an entire order, no matter what the assortment of particular varieties or article bought may be. In other words, the manufacturer does not quote a different price, by way of a different discount, on each item or each group of items, but, instead, applies a uniform discount for a greater or less variety of articles of a certain group.

Where the base-price practice is used, it is possible that some items in an order will be made the subject of a specific discount, but it is characteristic of the practice that miscellaneous articles will carry an identical discount. Thus the price differentials between the different articles in the list are kept the same (absolutely or relatively) through all variations in prices, not only from one order to another for a particular manufacturer but also for the orders filled by the different manufacturers in an industry where the base-price practice is established or customary.

The base-price practice is characteristic of the particular industry and has no necessary relation to the existence and activities of a trade association in the industry. Doubtless the getting together of manufacturers in associations, however, has helped in the extension of the practice. In some cases the association itself has been active in establishing or adopting such a list. The newer lists are often the result of the dominance of some particular manufacturer in an industry, whose price list is copied by the smaller producers.

The use of base price lists has an obvious relation to simplification and standardization, and, in fact, might be described as the standardization of list prices and differences.

Conditions Affecting the Development of the Practice

As is usual with anything that partakes of the nature of standardization, the pre-condition to a perception of its advantages is complexity and variety in products and the related need for multifarious price distinctions. There may, for example, be industrial need for a great variety of files and small tools and other small hardware articles; but the size of the particular buyer's demand for individual items of this sort is so small that

[3] The State ex rel. Barrett v. Carondelet Planing Mill Co. et al. 309 Missouri Reports 353.

[4] It should be noted that where quoting is by way of discounts from a detailed list the differentials remain relatively, not absolutely, constant.

a great saving in time in making quotations can be effected if they can be quoted in lumps. It is claimed that the buyer, as well as the seller, obtains an advantage from the base-price practice because of his ability to buy without first determining the quantity wanted for each individual article. It can easily be more important to have the matter of determining a price settled promptly by agreeing on a single discount from a base list than to obtain some gain from specific bargains on specific items. If there is competition as to the rate of discount, the interests of the buyer are safeguarded in this way, and, perhaps, more effectively protected than they would be with greater complexity in quoting.

On the other hand, it is true, the simplification of the process of quotation doubtless facilitates agreement on prices between sellers; and the devising of a base-price list, or of standard differentials, by an association may be accompanied by elements of agreement that are contrary to the antitrust laws.

Some base-price practices are hundreds of years old, existing lists having been brought to this country in colonial times. In other cases, and especially perhaps recently, groups of manufacturers have deliberately gone about the work of instituting a base-price list. Where the differentials are traditional and have been handed down as customary, any element of conspiracy is clearly not there. In some cases, conservative trade association officials, who would very much like to revise an existing base-price list to make the differentials conform more nearly to existing costs, have abstained from doing so because they felt that it was contrary to law. Doubtless there are considerable economic wastes in certain industries due to the failure of established differentials to conform to usual actual differences in cost. It is said, for example, that there is a base list for doors which differentiate according to a condition when numerous panels meant more labor, and, therefore, more cost; since which time the situation has been reversed, and now numerous panels mean the utilization of smaller pieces of lumber and less cost, the labor involved having meanwhile largely become a minor matter through the development of highly efficient machinery.

Industries in Which the Practice is Established

Among the lines in which the base-price practice is well established are the following:

Table and other glass ware.

Pottery, including both earthenware and vitreous china. A list appears to have been adopted by the Vitreous China Association.

Millwork (sashes, doors, etc.)

Pig lead and slab zinc.

Small hardware in general, including nails, screws, etc.

Cast-iron pipe.

Various iron and steel products.

Hand tools in general, from files to rather complicated carpenters' appliances.

Probably scales and balances, but with the facts not entirely clear.

Electrical supplies.

Leather belting.

Refractories.

Crucibles.

Grinding wheels.

Abrasives.

Glazed and colored tile.

Hollow building tile, clay soil pipes and similar clay products.

Vehicle wheels.

Lumber in many lines. The list is in some cases a direct association product and frequently modified by it.

Hickory products. The lists are stated to have been definitely prepared and revised by the association as an aid to standardization.

Pickles and kraut. In both cases the association appears to have made up the list.

In cotton textiles, as regards so-called finishes, at least a trace of the base-price practice appears in the assumption that "extras" are sold per list unless otherwise stated.

In lace manufacture the old so-called Nottingham list is important.

This enumeration is not complete, and is based on "information and belief."

General Considerations and Conclusions

The base-price practice receives attention in the present connection because of its relation to cost work. If the cost differences for different articles produced by the same manufacturer can be ascertained definitely by cost accounting, and if these differences are approximately constant from one manufacturer to another, then a base-price system of differentials is logical and desirable from a general economic point of view. Perhaps it is best to grant, for the purpose of the present argument, that cost may be thus definitely ascertained, and also that costs for a group of articles vary relatively from one manufacturer to another in about the same way. Then simplification and standardization of price-quoting and price-making methods by such means as the use of standard differentials are in themselves definitely desirable.

Furthermore, it is desirable that such a base-price list be founded upon and related to ascertainable relative differences in costs. It would seem, therefore, that the trade association in the industry should go ahead and establish these costs and compile the base-price list, or adapt the existing customs to recent cost experience, with due precautions to avoid any approach to fixing actual prices.

A possible objection to this line of thought is that a hard and fast system of price differences may prevent progress in an industry. One manufacturer, it may be contended, should be able to compete with others on a specific article, if he wishes to, without making an equally low relative price on other articles; but to this it may be answered that a base-price list is not binding upon the individual, who is at liberty to make any particular quotations he desires. Its benefits appear to be so great where it is available, that it will be used to whatever extent it is economical.

But the base-price practice may be adhered to (where it might better be departed from) merely because the individual manufacturer may fear the confusion, that would exist if he broke away from the established custom in his quotations, even though he feels that his cost on a particular article is relatively lower than indicated by the existing differentials, and that he could, therefore, profitably take additional business on that article at a relatively lower price.

The conclusion of such considerations is perhaps that the only objection to the base-price practice is the possible element of conspiracy and compulsion. The practice as such, and even the periodical revision of an established list by a trade association, does not appear undesirable or uneconomical. Action by the association to ascertain appropriate differentials should, however, be removed as far as possible from any agreement on actual prices. In the articles of association of one trade association (Cast-iron pipe), "to suggest price differentials without reference to the base price" is stated as one of its objects. The distinction is important, though whether it is sufficient in itself to satisfy the law may be doubted. A list expressing the differentials, for psychological reasons, will naturally not be put at the level of market prices. If costs are multiplied by 2 or 3, for example, in computing the list, the critical point for an agreement on prices becomes the discounts. But if associations are to be allowed to adjust and systematize the differentials, it is important to watch for the "nigger in the woodpile". Possibly some means, by which changes in a base-price list could be supervised by public authority, would more fully protect the public against understandings in this connection that illegally restrain trade, and at the same time permit needed group action. *The more mature legal opinion is that not only the use of a base-price list but the framing or amendment of one by a trade association is not in itself illegal.*

R. H. Laftman to Leave Bogalusa

The many friends in the pulp and paper industry of R. H. Laftman, vice president and general manager of the Bogalusa Paper Company of Bogalusa, La. will be interested to learn of his plan to leave Bogalusa on April 1. Mr. Laftman's resignation is the result of a merger involving the Bogalusa Paper Company, a subsidiary of the Great Southern Lumber Company which also maintains large saw mills at Bogalusa.

Mr. Laftman has gained many friends in the industry as a result of his genial disposition and ever ready willingness to cooperate and to contribute time and interest to the industry's well being. He is at present vice president of the Technical Association of the Pulp and Paper Industry and has done much to build up this organization to its present high standing in the paper

R. H. LAFTMAN

industry. In addition to his work for TAPPI he has served as chairman of the Advisory Committee to the Forest Products Laboratory at Madison, Wis. and is a strong supporter of research activities in the industry, being responsible for the excellent research laboratories of the Bogalusa Paper Company which are housed in a substantial building and include a good size paper machine, as well as a complete semi-plant pulping unit.

Mr. Laftman was superintendent of the Southern Paper Company at Moss Point, Miss. from 1911 to 1916. From 1916 to 1918 he was general superintendent of the Chesapeake Pulp and Paper Company at West Point, Va. During the War he was assistant superintendent of the cotton purification plant of the Hercules Powder Company and the United States Government Powder Plant at Nitro, W. Va. Since 1919 he has been president and general manager of the Bogalusa Paper Company.

Mr. Laftman has not made any definite arrangement relative to future connections and will remain at Bogalusa until the spring.

Boston Paper Market Steadier

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 12, 1931.—Some improvement in the paper industry in Boston and New England has developed since the first of the year. There is more confidence in the market. Business has fallen off in a few instances, but in some of these cases, there was more activity previously while those selling more now were less active. The majority of merchants report a greater volume of sales, or more inquiries, of which a substantial amount are expected to develop into orders. With a greater operation among large consumers of both fine and wrapping paper, these concerns have been making inquiries and placing orders. Printers have been using up their surplus stock, it is said, so that they will be obliged to come into the market soon for fresh supplies. During last year some concerns have had their printing done on cheaper paper. An instance is reported of a bank, which paid at the rate of 50 cents for paper in 1929, and paid only 16 cents in 1930, using sulphite bond instead of rag bond. One publisher is operating full time and using a large amount of paper. Another concern is running full time and two nights a week on advertising work.

Reports from manufacturing concerns using considerable paper indicate that orders will soon be forthcoming from these sources. A well known Massachusetts textile mill has orders on hand amounting to 15 per cent more than the production of the plant. Increased operation from other plants is also reported. An immense quantity of small orders is being received for glassine. As a whole business is gradually increasing in both fine and wrapping paper and in specialties. Some are optimistic that there will be a substantial volume of orders after the fifteenth of the month, when inventories will have been taken. Prices generally are firm. Values of the finer grades of paper have held steady as a whole through the depression, although, as is well known, the less expensive bonds and kraft have fluctuated to some extent. No. 1 kraft is now quotable at .04¼ to .05½ cents, compared with a previous range of .04¾ to .06.

The box board situation has a brighter outlook. Although the market averages fairly quiet at present, some orders are coming in and there are indications that more will develop before long. Stocks in the hands of consumers are said to be low. The paper stock market remains generally dull, with here and there a sale consummated. Among the sales of the week were two car loads of soft unbleached domestic rags at .08, a decline from a previous quotation of .09¼.

Paper Mills in Carthage Section Busy

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., January 12, 1931—Virtually all paper mills in this section are running on full time or slightly reduced schedules and officials claim that conditions now are much better than a year ago. It is the belief that the trend towards improved business conditions will continue and a number of the principal industries are already booked with orders for some time ahead.

At both the West End and Carthage divisions of the National Paper Products Company operations are being conducted on full time basis some weeks but for the most time three or four days a week. A schedule of four days a week is being observed at the plant of the Carthage Pulp and Board Company which was shut down for several days during the holiday season for inventory. The Island Paper Company is now operating four days a week following the annual shutdown and a normal working force is being employed.

Conditions in neighboring villages are similar. At West Carthage the bag mill of Taggart Brothers is now operating on full time after having been on curtailed schedules for a few weeks. The Champion Paper Company has returned to a schedule of four days a week with indications that it will soon again be running at capacity. At Herrings the paper bag plant of Taggart Brothers is operating on uncertain schedules with full time being observed some weeks and part time other weeks. The plant of the St. Regis Paper Company, at Deferiet, is maintaining a schedule of five days weekly with its full force being steadily employed.

Sorg Paper Co. Merger Becomes Effective

MIDDLETOWN, Ohio, January 5, 1931.—The consolidation agreement merging the Paul A. Sorg Paper Company, the W. B. Ogles by Paper Company, the Frank Smith Paper Company and the Paul A. Sorg Realty Company into a single corporation, to be known as The Sorg Paper Company, dated as of January 1, 1931, which was approved at the stockholders' meeting of December 8, 1930, became effective January 1, 1931.

Union Screen Plate Company

Fitchburg, Mass., U. S. A. Lennoxville, P. Q., Canada

UNION BRONZE

SCREEN PLATES FOR FLAT SCREENS
6 SLOTS—5 SLOTS—4½ SLOTS—4 SLOTS—PER INCH

Old Plates Reclosed and Re-cut to Accurate Gauge
Rolled Phosphor Bronze and Copper Plates for Rotary Screens

Sole Manufacturers of the Union Witham Screen Plate Vat and Fastener

TRIUNE
AND
MULTIPLE PLY DRYER FELTS

Serve every Felt Purpose in an efficient and satisfactory way.

ENGLISH or BAKER WOVEN

Made in three, four, five and six ply—60″ to 214″ wide.

FITCHBURG DUCK MILLS
FITCHBURG, MASS.

For 87 Years Makers of Fine Faced Felts For Papermakers

1864 1931

"EXCELSIOR" FELTS
for every grade of
PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

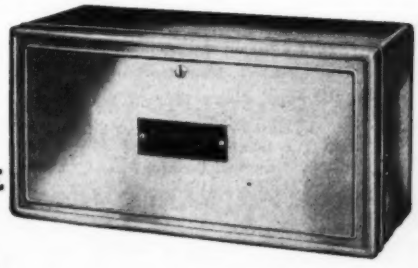
Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY
BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

GRIFFITH-HOPE

Dispensing Cabinets
AND
Fixtures
ARE
The STANDARD of the PAPER TRADE
For Towels, Toilet, Napkins, Etc.



GRIFFITH-HOPE CO., West Allis, Wisc.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 10, 1931

SUMMARY

Cigarette paper	2608 cs.
Wall paper	33 pks., 27 bls., 6 cs.
Paper hangings	1 bl., 2 cs.
News print	4032 rolls
Printing paper	28 cs.
Wrapping paper	23 bls., 6 cs.
Decalcomania paper	6 cs.
Filter paper	25 bls., 19 cs.
Drawing paper	30 cs.
Tissue paper	3 cs.
Surface coated paper	70 cs.
Photo paper	6 cs.
Writing paper	4 cs.
Colored paper	2 cs.
Tracing paper	3 cs.
Stencil paper	1 cs.
Card board boxes	6 cs.
Miscellaneous paper	121 cs.

CIGARETTE PAPER

Brown Williamson Tobacco Co., France, Havre, 4 cs.
Champagne Paper Corn., France, Havre, 9 cs.
Max Spiegel & Son, Collamer, Bordeaux, 9 cs.
American Tobacco Co., Collamer, Bordeaux, 1821 cs.
De Manduit Paper Corp., Collamer, St. Nazaire, 647 cs.
P. J. Schweitzer, Pr. Van Buren, Marseilles, 118 cs.

WALL PAPER

F. I. Emmerich, Carmania, Liverpool, 9 bls.
J. E. Bernard & Co., Samland, Antwerp, 29 pkgs.
E. O'Brien, Mauretania, Southampton, 1 bl.
J. E. Bernard & Co., Mauretania, Southampton, 16 bls.
Hudson F'd'g Co., Mauretania, Southampton, 1 cs.
R. F. Downing & Co., Majestic, Southampton, ton, 5 cs.
R. F. Downing & Co., Majestic, Southampton, 4 pkgs.
Chase National Bank, G. Washington, Hamburg, 1 bl.

PAPER HANGINGS

Whiting & Patterson Co., Inc., Mauretania, Southampton, 1 bl., 1 cs.
W. H. S. Lloyd & Co., France, Havre, 1 cs.

NEWS PRINT

W. H. Bell, Markland, Liverpool, N. S., 3652 rolls.
Perkins Goodwin & Co., Koln, Bremen, 87 rolls.
M. Douglas & Co., Koln, Bremen, 293 rolls.

PRINTING PAPER

Interantional F'd'g Co., E. Francqui, Antwerp, 5 cs.
Keuffel & Esser Co., G. Washington, Hamburg, 16 cs.
C. Steiner, Hinnov, Marseilles, 7 cs.

WRAPPING PAPER

International F'd'g Co., Samland, Antwerp, 3 cs.
Sylvania Industrial Corp., Samland, Antwerp, 5 bls., 3 cs.
C. Steiner, G. Washington, Hamburg, 18 bls.

DECALCOMANIA PAPER

L. A. Consmiller, Europa, Bremen, 6 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Majestic, Southampton, 9 cs.
Consumers Products Co., Inc., Collamer, Bordeaux, 10 cs.
C. G. Euler, Collamer, Bordeaux, 25 bls.

DRAWING PAPER

Keuffel & Esser Co., G. Washington, Hamburg, 30 cs.

TISSUE PAPER

W. J. Byrnes, Mauretania, Southampton, 3 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Samland, Antwerp, 70 cs.

PHOTO PAPER

J. J. Gavin, Mauretania, Southampton, 4 cs.
J. H. Schroeder Banking Corp., Europa, Bremen, 2 cs.

WRITING PAPER

Guibout Freres, Mauretania, Southampton, 4 cs.

COLORED PAPER

E. Daiber, E. Francqui, Antwerp, 2 cs.

TRACING PAPER

Simpson & Co., Samland, Antwerp, 3 cs.

STENCIL PAPER

W. J. Byrnes, Mauretania, Southampton, 1 cs.

CARD BOARD BOXES

P. Seguin, Pr. Van Buren, Marseilles, 6 cs.

MISCELLANEOUS PAPER

Jonas & Naumburg Corp., Samland, Antwerp, 1 cs.
Japan Paper Co., France, Havre, 2 cs.
Standard Products Corp., France, Havre, 67 cs.
Keller Dorian Paper Co., France, Havre, 13 cs.
American Express Co., Majestic, Southampton, 3 cs.
Simpson & Co., Pr. Van Buren, Genoa, 35 cs.

RAGS, BAGGINGS, ETC.

J. Cohen & Son, Carmania, Liverpool, 11 bls. rags.
P. Garvan, Inc., Sud Pacifico, Havana, 81 bls. rags.
Furness Withy & Co., London Corporation, London, 87 bls. rags
American Felt Co., City of Alton, Antwerp, 33 bls. flax waste.
W. Butterworth & Co., Inc., City of Alton, Antwerp, 37 bls. bagging.

OLD ROPE

Castle & Overton, Inc., London Corporation, London, 140 coils.
Irving Trust Co., Koln, Bremen, 73 bls. nets; 9 bls. warps; 20 bls., 35 coils
Irving Trust Co., G. Washington, Hamburg, 32 coils.
International Trust Co., Hinnoy, Barcelona, 39 coils.
E. J. Keller Co., Inc., Marengo, ——, 36 bls.

CASEIN

Martin Cantine Co., Victoriá, B. Ayres, 417 bags.
Orange National Bank, Mauretania, Southampton, 13 bags.

WOOD PULP

Pagel Horton & Co., Inc., Minnequa, Hornefors, 1200 bls. sulphite, 200 tons.
Lagerloef Trading Co., Svaneholm, Kotka, 127 bls. wood pulp.
Johanson Wales & Sparre, Inc., Hjelmaren, 2125 bls. sulphate.
Gothenburg, 2125 bls. sulphate.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 10, 1931

W. W. Jones Co., London Corporation, London, 243 bls. rags.
E. J. Keller Co., Inc., London Corporation, ——, 264 coils old rope
Katzenstein & Keene, Inc., Collamer, Bordeaux, 145 bls. rags.
Robert Blank, Collamer, Bordeaux, 85 bls. rags.
H. G. Lichenstein, Collamer, Bordeaux, 338 bls. rags.
Castle & Overton, Inc., Collamer, St. Nazaire, 88 bls. rags.
P. Berlowitz, Collamer, St. Nazaire, 254 bls. rags.
J. A. Steer & Co., Koln, Hamburg, 2 cs. paper.
Perkins, Goodwin & Co., Koln, Hamburg, 270 rolls news print.
Parsons & Whittemore, Inc., Koln, Hamburg, 775 bls. wood pulp.
J. H. Weil & Co., Koln, Hamburg, 8 cs. dawing paper.
Candy & Chocolate Egg Co., Koln, Hamburg, 2 cs. paper.
W. Steck & Co., Koln, Hamburg, 52 bls. nappers.
Bulkley Dunton & Co., Koln, ——, 525 bls. wood pulp.
——, Koln, Bremen, 60 rolls news print.
Neidich Process Co., Svaneholm, Helsingfors, 85 cs. tissue paper.
Atterbury Bros., Inc., Svaneholm, Viborg, 30 bls. sulphate.
Lagerloaf Trading Co., Svaneholm, Viborg, 13414 bls. sulphite; 825 bls. sulphate.
J. W. Hampton Jr., Inc., Svaneholm, Kotka, 171 rolls news print.
Lagerloaf Trading Co., Svaneholm, Kotka, 381 bls. mechanical pulp; 5634 bls. sulphite; 381 bls. sulphate.
Castle & Overton, Inc., City of Alton, Antwerp, 74 bls. rags.
Paper Manufacturers Co., City of Alton, Antwerp, 12 cs. parchment paper.
E. Butterworth & Co., Inc., City of Alton, Antwerp, 62 bls. rags.
Katzenstein & Keene, Inc., City of Alton, Antwerp, 644 bls. rags.
International Trust Co., Hinnoy, Marseilles, 73 rolls old rope.
Chemical Bank & Trust Co., Hinnoy, Barcelona, 59 bls. rags.
E. J. Keller Co., Inc., Seattle Spirit, ——, 510 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING JANUARY 10, 1931

Lagerloaf Trading Co., Koln, Bremen, 126 bls. wood pulp boards.
W. M. Stone & Co., Koln, Hamburg, 82 rolls news print.
Virginia Paper Co., Inc., Koln, Hamburg, 69 rolls news print.

BOSTON IMPORTS

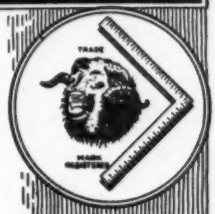
WEEK ENDING JANUARY 10, 1931

1st National Bank of Boston, Sardinian Prince, B. Ayres, 2500 bags casein.
Atterbury Bros., Inc., Sardinian Prince, B. Ayres, 834 bags casein.
1st National Bank of Boston, Mississippi, London, 67 bags casein.
Brown Bros. & Co., Mississippi, London, 192 coils old rope.
Baring Bros. & Co., Mississippi, London, 131 bls. waste paper.
Crocker Burbank Co., Mississippi, London, 241 bls. waste paper.
Irving Trust Co., City of Alton, Antwerp, 44 bls. bagging.
——, City of Alton, Antwerp, 36 bls. bagging.
W. Feinberg & Son, City of Alton, Antwerp, 17 bls. rags.
Meredith Linen Mills, City of Alton, Antwerp, 146 bls. flax waste.
Brown Bros. & Co., City of Alton, Antwerp, 50 bls. old rope.
E. Butterworth & Co., Inc., City of Alton, Antwerp, 69 bls. bagging; 213 bags old pickers.
Atkinson Haserick Co., Pr. Van Buren, Genoa, 16 cs. paper.

(Continued on page 64)

3 FEATURES of our "TOP FELTS for BOARD MACHINES"

A Trial Felt for Your Machines Will Prove These Facts.



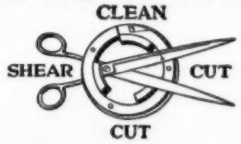
THE WATERBURY FELT CO., SKANEATELES FALLS, N.Y.

a clean cut ~ a sure cut ~ a shear cut ~

— *ball and roller bearings?*

absolutely!

LANGSTON
Slitters & Rewinders



West Virginia Pulp and Paper Company

Manufacturers of

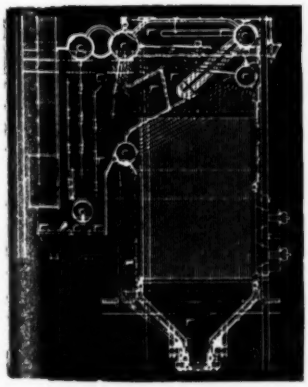
SUPERCALENDERED
and
MACHINE FINISHED BOOK
and LITHOGRAPHIC
PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

also

Bleached Spruce Sulphite and Soda, Kraft Pulp

230 Park Ave. New York — 35 East Wacker Drive Chicago
503 Market St., San Francisco, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.



BADENHAUSEN STEAM GENERATING UNITS

installed in some of the largest pulp and paper mills in the United States and Canada

MAXIMUM STEAM
AT
HIGHEST EFFICIENCY
WITH
LEAST CAPITAL INVESTMENT and OPERATING COSTS

Result:—Enormous savings in cost of pulp and paper produced.

BADENHAUSEN CORPORATION
General Offices and Works
CORNWELLS HEIGHTS (PHILA.), PA.

Imports of Paper and Paper Stock

(Continued from page 62)

BALTIMORE IMPORTS

WEEK ENDING JANUARY 10, 1931

Irving Trust Co., Minnequa, Helsingfors, 600 bls. mechanical pulp, 101 tons.

M. Gottesman & Co., Inc., Minnequa, Helsingfors, 1200 bls. mechanical pulp, 203 tons.

Lagerloaf Trading Co., Minnequa, Helsingfors, 187 bls., 138 rolls wood pulp boards.

Pagel Horton & Co., Inc., Minnequa, Hornefors, 12750 bls. sulphite, 2125 tons.

——, Minnequa, Husum, 19800 bls. sulphite, 3300 tons.

J. Madden, Koln, Bremen, 112 rolls news print.

Lagerloaf Trading Co., Koln Bremen, 132 bls. wood pulp boards.

Parsons & Whittemore, Inc., Koln, Hamburg, 184 bls. wood pulp.

Castle & Overton, Inc., Koln, Hamburg, 950 bls. wood pulp.

Russell McCandless, Rigel, Stockholm, 540 bls. unbleached sulphite.

Brotherhood to Meet in Montreal

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 12, 1931.—Announcement was made this week by officials of the International Brotherhood of Papermakers that the city of Montreal had been selected for the next convention of the organization in March. The choice was unanimous although a number of other cities were considered. It was learned that the International Brotherhood of Pulp, Sulphite and Paper Mill Workers has decided also to hold its annual meeting in the same city at that time. It is expected that several hundred delegates from all sections of the country will gather in the Canadian city and the executive board of the union plans to meet a few days before the convention starts.

Following the gathering a wage scale conference is planned in which all branches of the papermaking industry will be represented. While it is understood that no demands for increased wages will be made the resolutions adopted are expected to have a bearing on the industry in this country and Canada. Many of the contracts between the unions and paper manufacturers terminate next spring and this matter will be considered along with a proposition for working five days a week. It is understood that a number of paper mill men favor the adoption of the shorter week. Officials of the union claim that a survey just completed shows that the paper industry in this country and Canada is now operating near seventy per cent of capacity because of the fact that in many instances mills are on part time schedules.

W. R. Ewald Joins D. L. Ward Co.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 5, 1931.—George W. Ward, president of the D. L. Ward Company, Philadelphia, has announced the appointment of W. R. Ewald, for eleven years connected with the Campbell-Ewald Company of Detroit and prominent in advertising and direct mail circles throughout the United States, as vice-president in charge of sales promotion and advertising, effective January 1.

Mr. Ewald, who was director of the field service department of the Campbell-Ewald Company, has been identified with direct mail advertising for many years. On joining the Campbell-Ewald Company he organized the first direct mail department ever established in an advertising agency and remained its head for five years in addition to serving as office and business manager of the company.

Sensing the need of a field organization to contact the dealer organization of the company's clients, he organized its field service department six years ago. Starting with six men, the organization grew until it reached the proportions of forty men, covering the entire United States.

In the past ten years, he has been intensively concerned in building up direct mail advertising throughout the country, attending the first convention of the Direct Mail Advertising Association in Chicago. Five years ago he was elected a director of the association and last year served as vice-president. He was elected a director of the Advertising Federation of America in 1930 and at the Federation's convention in Washington last May was chosen vice-president. In September of this year he was elected director of the National Better Business Bureau.

Mr. Ewald has played a prominent part in the work of the Adcraft Club in Detroit, one of the leading organizations of its kind in the United States, having been on its directorate for the past five years and its president last year.

As vice-president of the D. L. Ward Company, he will have complete charge of all its sales-promotional activities and its advertising, with headquarters in Philadelphia, and at the same time will continue his present relations with the Direct Mail Advertising Association, the Advertising Federation of America, and the National Better Business Bureau.

The D. L. Ward Company is one of the largest paper distributors in the United States, handling the distribution of such lines as S. D. Warren, Hammermill, Linweave, Beckett, A. M. Collins, Crane, U. S. Envelope, and many others, in Eastern Pennsylvania, New Jersey and Delaware.

Harris-Seybold-Potter Acquire Wright Co.

Harris-Seybold-Potter Company has acquired the business of the J. T. Wright Company, Cincinnati, manufacturers of paper drills, paper punches, perforators and other machinery for the bookbinding trade.

J. T. Wright, who acquired the Tatum business some years ago and has been responsible for the development of Wright machines during the past eleven years, joins his experience and purpose with the Harris-Seybold-Potter Company organization.

Wright products have been sold for years through the same sales organizations as Seybold machines in practically all of the United States and Canada. Distribution will continue through these connections.

Two things of interest, therefore, to the trade are: First, Harris-Seybold-Potter Company adds to its products and becomes of broader use to the binding and printing industries. Second, Mr. Wright relieved of a multitude of duties will devote his entire thought to the development of drilling, punching and perforating machines and their practical application to the increasing volume and the broader field of work these machines are built to handle.

The Wright plant at Cincinnati has been closed and all machines and work in process moved to the Dayton plant of the Harris-Seybold-Potter Company, Seybold Machine Company Division, where production on the Wright line is already under way.

R. C. Waldheim Joins Massey & Wendell, Inc.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., January 12, 1930.—Robert C. Waldheim, son of W. W. Waldheim, of the Norwood Press, Norwood, Mass., has taken a position as salesman for Massey & Wendell, Inc., and will specialize on book and publishing accounts in New England. Mr. Waldheim was a student at Norwich University, Northfield, Vt., and left in 1927. He was with the Arnold-Roberts Company about eight months, and from that concern went to the laboratory of the Fitchburg Paper Company, Fitchburg, Mass., acquiring technical knowledge of the manufacture of paper. In the fall of 1928 he took a position at the plant of Tileston & Hollingsworth Company, with work in connection with the paper machines. Later he was with Rutter & McNaught, Inc., for about two years immediately previous to his association with Massey & Wendell, Inc. One of the grades in which Massey & Wendell, Inc., are to specialize is Beverly Bond, a rag content sheet, which, it is felt, will receive favorable comment from the trade.

Wood Tanks

are not Corrodible

Half-Round Stuff Chests made of 3-inch Genuine Red Gulf Cypress with heavy Yellow Pine bracing. Built and erected in the Frank Smith Paper Mill at Middletown, Ohio.

The Hauser-Stander Tank Company
Cincinnati Ohio

Wood tanks for every purpose in the paper mill, accurately made and only the best material and workmanship are used in their construction.

SCAT! —and fuzz disappears

The magic in ridding a paper sheet of fuzz is simple. No mystery — just chemistry. Use silicate of soda size in the beater.

Let us tell you the experience of other mills in this respect as reported by the auditing engineers of the A. C. Nielsen Co. Other benefits of silicate include increased ink resistance, improved hydration. May we tell you more about P.Q. Silicate in the manufacture of paper?

Philadelphia Quartz Co.

General Offices and Laboratory
121 S. THIRD ST., PHILADELPHIA
Chicago Office: 205 W. Wacker Drive

1831—*BEGINNING ANOTHER CENTURY*—1931

Sulphur

A FIRST REQUISITE

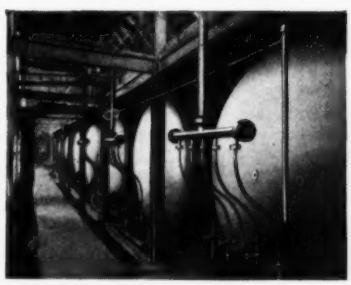
in

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO

(Incorporated)
75 East 45th Street, New York City
Mine: Gulf, Matagorda County, Texas



BiggsGlobe, Cylinder and Tumbling Digesters, Welded or Riveted Stationary Digesters Penstocks

Write for "Unusual Steel Plate Construction"

Biggs Boiler Works Co.
AKRON, OHIO

Largest Single Installation of Sulphite Digesters

BIGGS ROTARIES *for years of dependable cooking and bleaching...*

The New Rolled Process

Improves the wires, both for fourdrinier and for cylinder use.
Gives longer life.
Improves the finish of the sheet.
Less trouble on the machine.
The only wire with a perfect surface.

WISCONSIN WIRE WORKS

APPLETON — WISCONSIN

New York Market Review

Office of the PAPER TRADE JOURNAL
Wednesday, January 14, 1931

Some slight improvement was noticed in the demand for several of the standard grades of paper during the past week. Other grades, however, were only moderately active. Now that the holidays are over, and the inventory period is drawing to a close, trading should become more active in the near future. Prices are holding to former levels, in most instances.

The news print situation is practically unchanged. Production is being maintained at 62 per cent of capacity, according to information gathered by the News Print Service Bureau. Shipments are going forward at approximately 59 per cent of rating. Local advertising during Automobile Show last week compared unfavorably with the preceding year's record.

Demand for the various grades of paper board was slightly better. Following the usual holiday decline in production, the output is gradually being speeded up. Prices remain unchanged. Fine papers are exhibiting a strong undertone. The tissue situation is rather involved. Conditions in the coarse paper market are fairly satisfactory. Kraft wrapping paper is moving in better volume.

Mechanical Pulp

While the ground wood market continues quiet, the mechanical pulp industry is in a sound position. Offerings of both domestic and imported ground wood are somewhat limited, due mainly to the recent drought and to curtailment of operations abroad. Inquiries for future requirements are fairly numerous. Prices are generally unchanged and shading is infrequent.

Chemical Pulp

Little change was noticed in the chemical pulp market during the past week. There was a fairly satisfactory demand for unbleached sulphite, however. With the end of the inventory period, trading in the various grades is expected to become more lively. Prices remain unchanged, in most instances, although there have been reports of concessions on extra desirable orders.

Old Rope and Bagging

Despite the fact that the old rope market was rather dull, the outlook for the future is considered promising, in some quarters. Demand for both domestic and foreign old manila rope was only fair. Prices rule steady, however. The bagging market is practically unchanged. Gunny bagging is moving in normal volume for the season. Scrap bagging is dull at present.

Rags

Trading in the domestic rag market was light, although there are a satisfactory number of inquiries around for future needs. Cotton cuttings are going forward in seasonal volume. Roofing stock and mixed rags continue quiet. Prices are generally holding to formerly quoted levels. The position of the imported rag market is practically unchanged.

Waste Paper

The better grades of waste paper are in fairly persistent request, especially soft white shavings, hard white shavings and white envelope cuttings. The board mills are not evincing much interest in the lower grades, but demand should expand with the inventory period out of the way. The price situation is showing some signs of improvement.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. The position of the industry, however, is considered fairly satisfactory considering the general business depression. Inquiries for future needs are fairly numerous. Prices of the various grades are generally holding to previously quoted levels.

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 14, 1931—The Government Printing Office has announced the following paper awards.

Reese & Reese will furnish 16,000 pounds (60,000 sheets) of 24 x 36 high finish red sulphite paper at 6.95 cents per pound, bids for which were received on December 12.

R. P. Andrews Paper Company will furnish 80,000 pounds (35,200 sheets) of hard rolled binders board at 3.45 cents per pound. Reese and Reese will furnish 5,000 sheets of 22 x 28 4-ply red railroad board at $32.15 per M sheets. Barton, Duer & Koch Paper Company will furnish 80,000 pounds of manila calendered tag board in 23¼ rolls at 7.2 cents per pound. Bids for all of these items were received on December 15.

Barton, Duer & Koch Company will also furnish 40,000 pounds (16,000 sheets) of best quality binders board at 5.5 cents per pound, bids for which were received on December 17.

The Perfect Safety Paper Company will furnish 2,550 pounds (50,000 sheets) of 17 x 28 51, yellow safety writing paper at 12.25 cents per pound. Barton, Duer & Koch Company will furnish 10,000 pounds of brown calendered tag board in 23¼ inch rolls at 7.84 cents per pound. R. P. Andrews Paper Company will furnish 40,000 pounds (20,000 sheets) of No. 2 quality, hard rolled binders board at 3.45 cents per pound. Bids for all of these items were received on December 31.

Barton, Duer & Koch Paper Company will also furnish 80,000 pounds of manila calendered tag board in 23¼-inch rolls at 7.2 cents per pound, bids for which were received on January 7 and Eaton Crane & Pike Company will furnish 3,000 sheets of mourning paper at $24.40 per thousand sheet, bids for which were received on January 9.

Harbor Improvements Near Ogdensburg

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., January 3, 1931.—Prominent paper mill men were among the principal witnesses at a hearing held here this week relative to carrying on harbor improvements in this vicinity. The Chamber of Commerce is now gathering information prior to filing recommendation with the Government. The main witness at the state has furnished equal financial aid. Essex and Saratoga Paper Corporation, which operates a fleet of boats on the St. Lawrence River. In his testimony he declared that removal of obstructions in the harbor would be the means of providing passage for larger vessels, while enlarged facilities would also be available in the winter. He also said that he considered the St. Lawrence channels safe for navigation as shown by the few accidents occurring in recent years.

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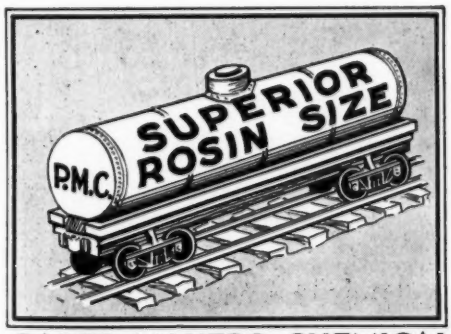

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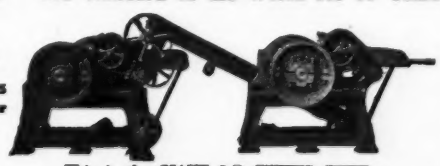

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Miscellaneous Markets

Wednesday, January 14, 1931
Office of the PAPER TRADE JOURNAL

BLANC FIXE.—Trading in the blanc fixe market was moderately active. The contract movement was seasonal. Prices generally remain unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Shipments against contract are going forward at a normal pace for the time of year. Prices are holding to schedule. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—Trading in the casein market was rather quiet during the past week. Domestic standard ground is still quoted at 9½ cents and finely ground at 12 cents per pound, while Argentine standard ground is selling at 11 cents and finely ground at 12 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market was irregular, with prices easier, due to severe competition for desirable orders. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness continues to prevail in the china clay market. Demand is steady and prices are holding to previously quoted levels. Imported china clay is selling at from $15.00 to $25.00 per ton, while domestic paper making clay is offered at from $8.00 to $13.00 per ton, at mine.

CHLORINE.—The chlorine market is exhibiting a slightly better trend. Demand from the paper mills shows signs of improvement. No further price changes have been recorded of late. Chlorine is still being offered at $1.75 per 100 pounds, tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Further weaknesses developed in the rosin market. Prices were easier. The grades of gum rosin used in the paper mills are now quoted at from $5.05 to $5.45 per 280 pounds, in barrels, at yards; while wood rosin is selling at $3.80 per 280 pounds, in car lots, at southern shipping points.

SALT CAKE.—The salt cake market was rather quiet during the past week. However, there were a fair number of inquiries for future needs. Salt cake is still quoted at from $16 to $17; German salt cake at from $15.50 to $16; and chrome salt cake at from $15 to $16 per ton, in bulk, at works.

SODA ASH.—Conditions in the soda ash market are unsettled. Due to keen competition prices are easier. Demand at present is mostly along routine lines. Contract quotations on soda ash, in car lots, at works, are as follows: in bulk $1.15; in bags, $1.32; and in barrels, $1.55 per 100 pounds.

STARCH.—Demand for starch is fairly active. Supplies are going forward to the paper mills in satisfactory volume for the time of year. Prices are holding to formerly quoted levels. Special paper making starch is quoted at $3.27 in bags; and at $3.54 per 100 pounds, in barrels, at works

SULPHATE OF ALUMINA.— Paper mill demand for sulphate of alumina is fairly satisfactory. The contract movement is normal. Prices are holding to the recently revised schedule. Commercial grades are quoted at $1.25 to $1.40 and iron free at $1.90 to $2.05 per 100 pounds in barrels, at works.

SULPHUR.—The sulphur market is steady and demand is persistent. Sulphur is still quoted at $18 per long ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—No radical changes were reported in the talc market. Contract shipments are moving in fair volume. Prices are holding to schedule, in most instances. Domestic talc is quoted at from $16 to $18 per ton, in bulk; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	6.75	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	6.75	@	11.00
Book, Cased—			
S. & S. C.	5.50	@	—
M. F.	5.25	@	—
Coated and Enamel	7.00	@	10.50
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.65	@	.67½
Anti-Tarnish M G only	.65	@	.70
Colored	.70	@	.90
White No. 2	.55	@	.57½
Kraft	.65	@	.70
Manila	.55	@	.57½
Kraft—			
No. 1 Domestic	4.25	@	5.30
No. 2 Domestic	3.00	@	3.75
Southern	3.00	@	3.75
Imported	6.00	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¼	@	—
No. 2	.11¼	@	—
Bleached, basis 20 lbs.	.11¼	@	—
(Delivered New York)			
News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	32.50	@	35.00
Straw	40.00	@	45.00
Chip	30.00	@	32.00
Binders' Boards	65.00	@	70.00
Standard Test Jute Liner	40.00	@	42.00
Sgl. Mla. Lt. Chip.	42.50	@	—
(F. o. b. Mill)			
Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	28.00	@	32.00
Dry	30.00	@	34.00
(F. o. b. Mill)			
No. 1 Domestic	28.00	@	34.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.00	@	4.25
Easy Bleaching	2.60	@	2.80
No. 1 strong unbleached	2.00	@	2.65
Mitscherlich unbleached	2.15	@	2.70
No. 2 strong unbleached	1.95	@	2.05
No. 1 Kraft	1.50	@	1.75
No. 2 Kraft	1.40	@	1.55
Sulphate—			
Bleached	3.40	@	3.85
(F. o. b. Pulp Mill)			
Sulphite (Domestic)—			
Bleached	2.65	@	4.75
Easy Bleaching Sulphite	2.55	@	2.75
News Sulphite	2.35	@	2.60
Mitscherlich	2.50	@	3.25
Kraft (Domestic)	2.10	@	2.75
Soda Bleached	2.75	@	2.90

Domestic Rags

New Rags

(Prices to Mill f. o. b N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	@	8.50
New White, No. 2	7.00	@	7.25
Silesias No. 1	6.50	@	7.00
New Unbleached	8.25	@	9.00
New Blue Prints	5.25	@	5.50
New Soft Blacks	4.00	@	4.50
Blue Overall	6.25	@	6.50
Washables	4.25	@	4.75
Fancy	4.75	@	5.25
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	7.50	@	8.00
O. D. Khaki Cuttings	5.15	@	5.75
Men's Corduroy	3.50	@	4.00
New Mixed Blacks	3.25	@	3.50
Old Rags			
White, No. 1—			
Repacked	5.25	@	5.75
Miscellaneous	4.25	@	4.75
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.30	@	2.50
St. Soiled, White	1.50	@	1.75
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.65	@	1.85
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.25	@	1.30
No. 1	1.25	@	1.30
No. 2	.90	@	1.00
No. 3	.70	@	.80
No. 4	.65	@	.70
No. 5A	.50	@	.60

Foreign Rags

New Rags

New Dark Cuttings	2.30	@	2.50
New Mixed Cuttings	2.25	@	2.75
New Light Silesias	6.25	@	6.50
Light Flannelettes	6.50	@	7.00
Unbleached Cuttings	8.25	@	8.75
New White Cuttings	7.50	@	8.00
New Light Oxfords	6.00	@	6.50
New Light Prints	4.75	@	5.25
Old Rags			
No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	5.75	@	6.75
No. 3 White Linens	4.75	@	5.25
No. 4 White Linens	3.00	@	3.50
No. 1 White Cotton	5.50	@	5.75
No. 2 White Cotton	4.50	@	5.00
No. 3 White Cotton	3.00	@	4.00
No. 4 White Cotton	1.70	@	1.80
Extra Light Prints	2.75	@	3.00
Ord. Light Prints	2.15	@	2.40
Med. Light Prints	1.65	@	1.75
Dutch Blue Cottons	2.00	@	2.10
French Blue Linens	2.65	@	2.75
German Blue Linens	2.25	@	2.40
German Blue Cottons	1.85	@	1.90
Checks and Blues	1.85	@	1.90
Lindsay Garments	1.20	@	1.30
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.95	@	1.05
French Blues	1.90	@	2.00

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.65	@	1.80
Domestic	1.65	@	1.80
Wool Tares, light	1.30	@	1.40
Wool Tares, heavy	1.35	@	1.40
Bright Bagging	1.30	@	1.35
Small Mixed Rope	.90	@	1.00
Manila Rope—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00
New Burlap Cut	2.25	@	2.50
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	2.75	@	2.85
Hard White, No. 2	2.30	@	2.40
Soft, white, No. 1	2.50	@	2.60
White envelope cuttings	2.95	@	3.05
Flat Stock—			
Stitchless	.90	@	1.00
Overissue Mag.	.90	@	1.00
Solid Flat Book	.75	@	.85
Crumpled No. 1	.60	@	.70
Solid Book Ledger	1.90	@	2.00
Ledger Stock	.80	@	.90
New B. B. Chips	.25	@	.30
Manilas—			
New Env. Cut	2.00	@	2.20
New Cuttings	1.50	@	1.65
Extra No. 1 old	1.25	@	1.35
Print	.50	@	.60
Bogus Wrapper	.50	@	.60
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	1.20	@	1.30
News—			
No. 1 White News	1.70	@	1.80
Strictly Overissue	.40	@	.45
Strictly Folded	.30	@	.35
No. 1 Mixed Paper	.15	@	.20
Common Paper	Nominal		

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ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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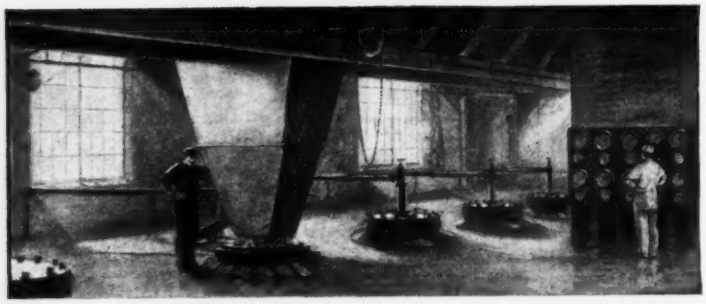

In the
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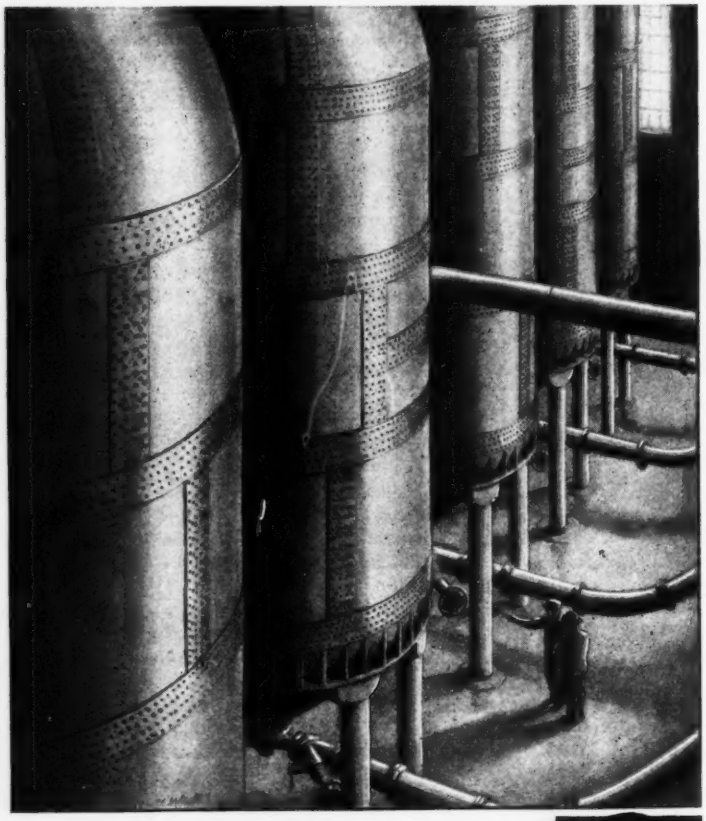
INDUSTRY

235 of the LEADING PAPER MILLS

Use Republic Meters to Reduce Their Steam Costs



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